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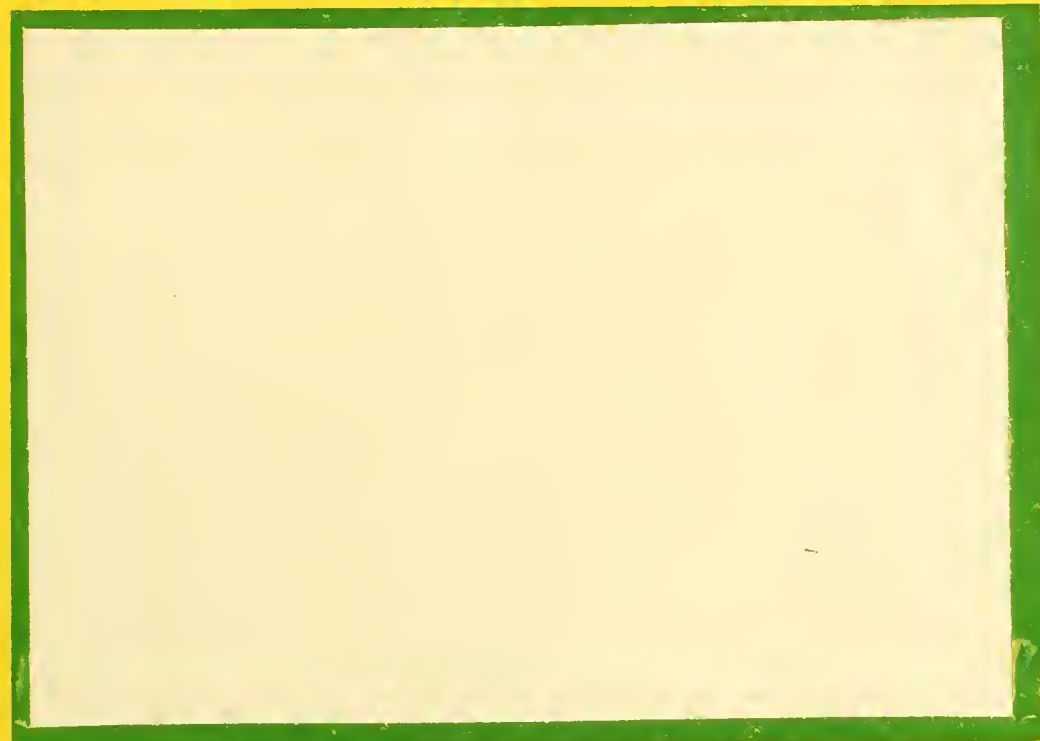
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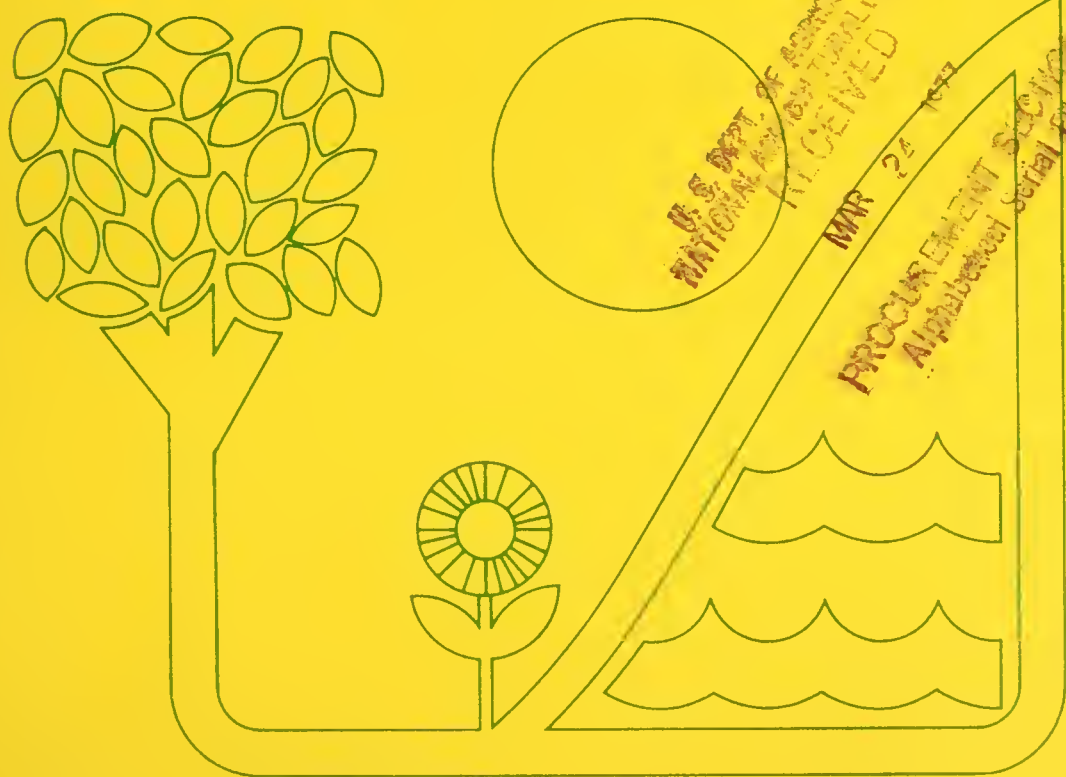
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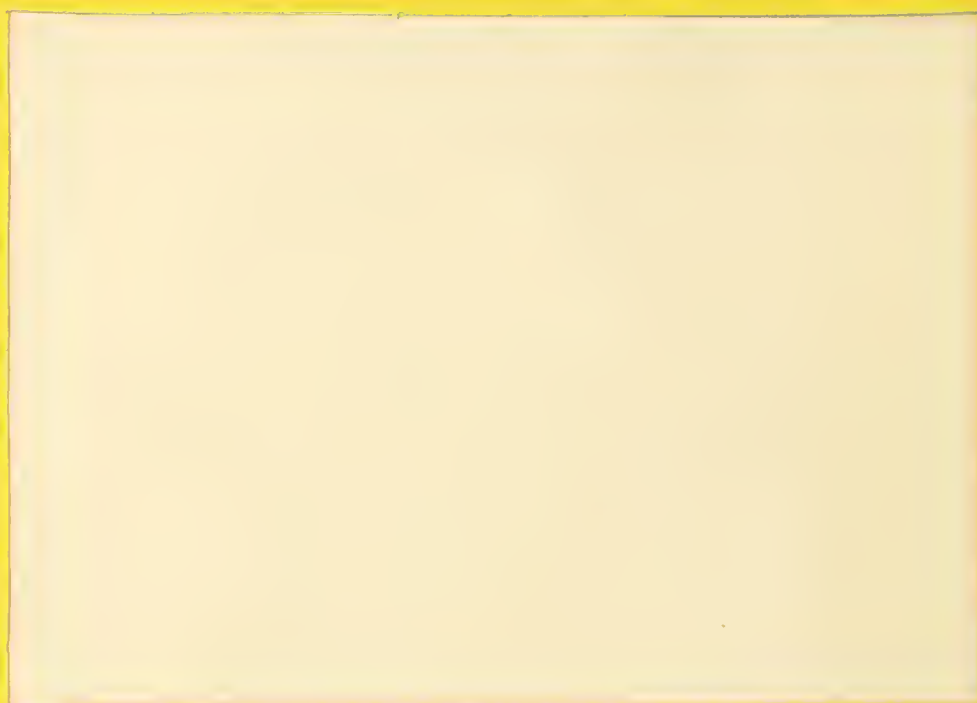


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Number 9

SELECTED CROP ENTERPRISE COST BUDGETS
FOR OREGON

B. Ted Kuntz

May 1976

Northwestern Resource Program Group
Natural Resource Economics Division
Economic Research Service
U.S. Department of Agriculture
319 Extension Hall
Oregon State University
Corvallis, Oregon

PREFACE

This report for Oregon is one of three reports on crop budgets prepared as input data to the Pacific Northwest Region's least-cost linear programming model. In 1973 the Economic Research Service (ERS) purchased a copy of the Oklahoma State University Crop and Livestock Budget Generator Program and installed it on the Oregon State University computer. The crop budgets presented in this report were processed by this computer program. Both the crop budget work and the linear programming work are part of the study to prepare the Coordinated Comprehensive Joint Plan for land and water resources in the Pacific Northwest Region.

The Economic Research Service cooperated with the Soil Conservation Service in collecting data on machinery operations for crop budgets. Special recognition is given to Paul Dyke, Economic Assistant, ERS, for extra effort in adapting the Oklahoma State University program to run on the Oregon State University computer, and to Keith Cromwell, Economist with the Soil Conservation Service, for assistance in collection of budget input data and review of crop budgets. Without the assistance of these individuals, the budgets presented in this report would not be available.

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SELECTED CROP ENTERPRISE COST BUDGETS
FOR OREGON

by
B. Ted Kuntz^{1/}

INTRODUCTION

This report by the Economic Research Service of the United States Department of Agriculture is a contribution to the Pacific Northwest River Basins Commission's Comprehensive Coordinated Joint Plan for the Pacific Northwest Region. The study is a part of the Water Resources Council program to develop plans for comprehensive water development and management for all major river basins in the United States. The objective of the study is to prepare a plan to guide federal, state, and local interests in the efficient, timely, and comprehensive management, conservation, development, and utilization of water and related land resources.

AGENCY REPORT PURPOSE

The purpose of this report is to make available to cooperating agencies the crop enterprise cost data developed as input data to the Pacific Northwest Region least-cost linear programming model. These crop budgets were prepared specifically for use in an economic evaluation of the productive capacity of the land resources. Therefore, the input costs, machinery performance rates, and assumptions in the budgets, are consistent in all budgets. Costs were calculated by a crop budget generator program developed at Oklahoma State University and recently installed on the computer at Oregon State University. Use of the crop budget generator greatly facilitates calculation of costs and consistency of assumptions among budgets.

^{1/} Agricultural Economist, Economic Research Service, Natural Resource Economics Division, U.S. Department of Agriculture, Corvallis, Oregon.

This report will minimize the discussion of the crop budget generator program. The methodology in the program was developed at Oklahoma State University, and has been used unchanged. Also, many of the definitions that follow in this report are identical or only slightly modified from those developed at Oklahoma State University. A complete discussion of the methodology, computational algorithms, computer installation procedures, operation of the program, and file maintenance procedures necessary to use the budget generator is available in the following reports:

Walker, Rodney L. and Darrel D. Kletke. User's Manual, Oklahoma State University, Crop Budget Generator, Oklahoma State University Agricultural Experiment Station Progress Report P-656, November 1971, revised October 1972 [8].

Kletke, Darrel D. User's Manual, Oklahoma State University Livestock Budget Generator, Oklahoma State University Agricultural Experiment Station Research Report P-661, April 1972 [3].

Walker, Rodney L. and Darrel D. Kletke. The Application and Use of the Oklahoma State University Crop and Livestock Budget Generator, Oklahoma State University Agricultural Experiment Station Research Report P-663, July 1972, and the supplement and corrections to Research Report P-663, March 1974 [7].

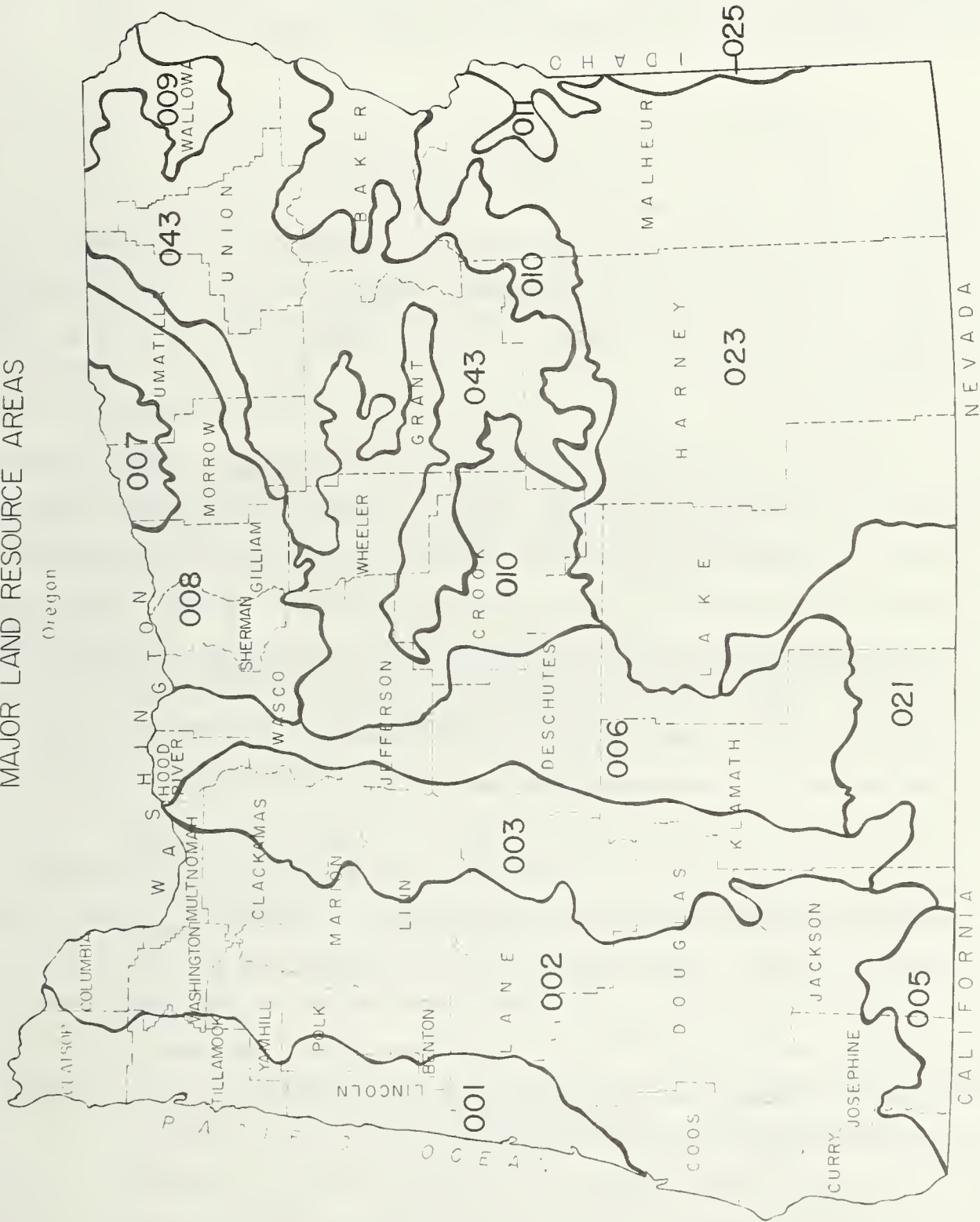
A discussion of the equations used in calculating the various costs is included in Appendix I of this report.

PROCEDURE

Crop budgets presented in this report were developed by land resource areas within Oregon. Land resource areas are delineated, with emphasis on general uniformity of natural cover, land use, topography, climate, and range of soil characteristics for contiguous areas within the broad landscape. Figure 1 shows the land resource areas that have been delineated in Oregon.

MAJOR LAND RESOURCE AREAS

Oregon



LEGEND	
001	Northern Pacific Coast Range and Valleys
002	Willamette and Puget Sound Valleys
003	Olympic and Western Slope Cascade Mountains
005	Siskiyou-Trinity Area
006	Eastern Slope Cascade Mountain
007	Columbia Basin
008	Columbia Plateau
009	Palouse and Nez Perce Prairies
010	Upper Snake River Plain and Hills
011	Slope River Plains
021	Klamath and Shasta Valleys and Basins
023	Malheur High Plateau
025	Owyhee High Plateau
043	Northern Rocky Mountains

Figure 1

Crops for which budgets would be developed were limited to those crops included in the 1972 OBERS Food and Fiber projections for Oregon [6]. The OBERS crops are generally defined as those crops with 1 percent or more of the U.S. production of that crop produced in the state. This report contains budgets for the following crops: wheat, barley, oats, potatoes, field corn, seed corn, sweet corn for processing, wild hay, alfalfa hay, and clover-timothy hay. Irrigated, nonirrigated, and various rotation practice budgets are included where applicable.

Crop production and input data in terms of machinery operations, purchased inputs, yield, and irrigation practices, were collected by personnel of the Soil Conservation Service. The data collected represent a blend of typical tillage practices and machinery complements for each area. Implied levels of management associated with these typical practices are those of the larger, more successful farmers in the various land resource areas.

Cost data included in the budgets are for late 1974. These data were collected from machinery dealers, farmer cooperatives, and fertilizer and chemical dealers, by personal and telephone interview. Product prices were taken from the U.S. Water Resources Council, Agricultural Price Standards for Water and Related Land Resources Planning, October 1974 [5]. Where product prices were needed for crops not in the above report, current normal prices were estimated for 1974 by similar procedures used in generating the price data in the above report.

Water costs are not included in the irrigated crop budgets. Published and unpublished data on charges to the farmer for water were collected on user-operated Bureau of Reclamation and private irrigation water supply projects. The charges for water varied considerably. Completeness and availability of the data proved inadequate to estimate weighted average costs for water by land resource areas. Therefore, water costs were omitted from the budgets.

Costs and labor requirements for five on-farm irrigation systems were estimated, using published and unpublished data. The systems were hand-move sprinklers, side-move sprinklers, side-move tow sprinklers, self-propelled sprinklers, and surface flooding. All systems are used on most crops in any land resource area. However, data are not available to estimate weighted average irrigation costs. Therefore, the predominant irrigation system, based on the knowledge of the Soil Conservation Service personnel, was selected by crop in each land resource area.

MACHINERY COMPLEMENT

The machinery complement data presented in table 1 are the input data necessary for calculating machinery costs in the crop budget generator program. The program uses these data and the equations presented in Appendix table 1 for all budgets. Costs of machinery are based on data and assumptions included in table 1. This is advantageous in updating budgets, because only the values in this table need to be changed to update the machinery costs in all budgets. Because of the importance of these data, the table will be discussed by column.

Column

1. Code number - a number between 1 and 100 that is used internally in the computer program in lieu of the name of the machine.
2. Width - the swath, in feet, that a machine covers, except for tractors. For tractors, this column gives the horsepower. Width of the equipment is used with speed and field efficiency to calculate performance rates for the machines.
3. Initial list price - this variable is the factory-recommended selling price in dollars, not the purchase price of the machine. For those machines that only purchase price was available, a factor of 1.088 was used to estimate list price. This

Table 1.--Machinery complement, Oregon, 1974

Column.....	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Name of machine	Code	Width (ft.)	Initial list price	Speed (mph)	Field effi- ciency	HC1	HC2	HC3	Hours used annually	Years owned	RV1	RV2	Purchase price	Fuel type	Hours of life	HP
Wheel tractor.....	1	40.0	7,500	4.5	.88	1.20	.000631	1.60	600	10.0	.680	.920	6,900	3	12,000	40
Wheel tractor.....	2	50.0	8,500	4.5	.88	1.20	.000631	1.60	600	10.0	.680	.920	7,820	3	12,000	50
Wheel tractor.....	3	60.0	11,000	4.5	.88	1.20	.000631	1.60	600	10.0	.680	.920	10,120	3	12,000	60
Wheel tractor.....	4	100.0	22,000	4.5	.88	1.20	.000631	1.60	600	12.0	.680	.920	20,260	3	12,000	100
Crawler tractor...	5	92.0	41,000	3.8	.88	.80	.000631	1.60	600	12.0	.680	.920	37,720	3	16,000	92
Crawler tractor...	6	65.0	28,000	3.8	.88	.80	.000631	1.60	600	12.0	.680	.920	25,760	3	16,000	65
Crawler tractor...	7	92.0	41,000	3.8	.88	.80	.000631	1.60	600	12.0	.680	.920	37,720	3	16,000	92
Wheel tractor.....	8	80.0	15,400	4.5	.88	1.20	.000631	1.60	600	10.0	.680	.920	14,200	3	12,000	80
Wheel tractor.....	9	60.0	11,000	4.5	.88	1.20	.000631	1.60	600	10.0	.680	.920	10,120	3	12,000	60
SP combine.....	13	14.0	33,000	3.0	.67	.33	.000251	1.80	250	10.0	.615	.895	30,400	1	2,500	110
SP combine hill...	14	16.0	46,000	3.0	.67	.33	.000251	1.80	250	10.0	.615	.895	42,300	1	2,500	121
SP combine.....	15	18.0	37,000	3.0	.67	.33	.000251	1.80	250	10.0	.615	.895	34,000	1	2,500	121
SP swather.....	16	12.0	10,000	4.5	.77	1.00	.000251	1.30	75	10.0	.660	.880	9,200	1	1,500	40
SP swather.....	17	14.9	12,000	4.5	.77	1.00	.000251	1.30	100	10.0	.660	.880	11,000	1	1,500	50
SP combine.....	18	12.0	32,000	3.0	.67	.33	.000251	1.80	250	10.0	.635	.895	29,400	1	2,500	110
MB plow 3-16.....	30	4.0	2,900	3.8	.80	2.00	.002510	1.30	100	10.0	.600	.885	2,670	0	2,000	0
MB plow 4-16.....	31	5.3	3,600	3.8	.80	2.00	.002510	1.30	300	6.0	.600	.885	3,110	0	2,000	0
MB plow 5-16.....	32	6.7	4,300	3.8	.80	2.00	.002510	1.30	300	6.0	.600	.885	3,960	0	2,000	0
MB plow 6-16.....	33	8.0	5,500	3.8	.80	2.00	.002510	1.30	300	6.0	.600	.885	5,060	0	2,000	0
MB plow 10-16.....	34	13.3	7,500	3.8	.80	2.00	.002510	1.30	300	6.0	.600	.885	6,900	0	2,000	0
Corrugator.....	35	12.0	600	3.8	.76	1.00	.000251	1.80	100	10.0	.600	.885	500	0	2,000	0
Corrugator.....	36	24.0	1,200	3.8	.76	1.00	.000251	1.80	100	10.0	.600	.885	1,100	0	2,000	0
Offset disk.....	37	18.0	7,000	3.8	.83	.65	.000251	1.80	100	10.0	.600	.885	6,440	0	2,000	0
Offset disk.....	38	24.0	9,000	3.8	.83	.65	.000251	1.80	100	10.0	.600	.885	8,280	0	2,000	0
Tandem disk.....	39	8.0	1,700	4.0	.83	.65	.000251	1.80	100	10.0	.600	.885	1,560	0	2,000	0
Tandem disk.....	40	10.0	3,500	4.0	.83	.65	.000251	1.80	100	10.0	.600	.885	3,220	0	2,000	0
Tandem disk.....	41	20.0	7,000	4.0	.83	.65	.000251	1.80	100	10.0	.600	.885	6,440	0	2,000	0
Rod weeder.....	43	36.0	5,200	4.0	.83	.65	.000251	1.80	100	10.0	.600	.885	4,780	0	2,000	0
Spike harrow.....	45	12.0	460	4.2	.70	.65	.000251	1.80	100	10.0	.600	.885	420	0	2,000	0
Spike harrow.....	46	20.0	770	4.2	.70	.65	.000251	1.80	100	10.0	.600	.885	700	0	2,000	0
Spike harrow.....	47	30.0	1,160	4.2	.70	.65	.000251	1.80	100	10.0	.600	.885	1,050	0	2,000	0
Spike harrow.....	48	40.0	1,540	4.2	.70	.65	.000251	1.80	100	10.0	.600	.885	1,400	0	2,000	0
Spike harrow.....	49	50.0	1,870	4.2	.70	.65	.000251	1.80	100	10.0	.600	.885	1,700	0	2,000	0
Sweep CC cultiv...	50	18.0	2,300	3.8	.76	1.00	.000251	1.80	50	20.0	.600	.885	2,110	0	2,000	0
Sweep CC cultiv...	51	24.0	2,800	3.8	.76	1.00	.000251	1.80	50	20.0	.600	.885	2,580	0	2,000	0
Float.....	52	12.0	750	3.0	.83	.60	.000251	1.30	50	10.0	.600	.885	690	0	2,500	0
Row cultivator....	53	6.0	750	3.0	.80	1.00	.000251	1.80	100	10.0	.600	.885	690	0	2,000	0
Row cultivator....	54	12.0	1,800	3.0	.80	1.00	.000251	1.80	100	10.0	.600	.885	1,660	0	2,000	0
Row cultivator....	55	16.0	2,900	3.0	.80	1.00	.000251	1.80	100	10.0	.600	.885	2,670	0	2,000	0
Roller.....	56	12.0	1,200	4.0	.67	.80	.000631	1.60	60	10.0	.600	.885	1,100	0	1,200	0

continued

Table 1.--Machinery complement, Oregon, 1974 (continued)

Column.....	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Name of machine	Code	Width (ft.)	Initial list price	Speed (mph)	Field efficiency	RC1	RC2	RC3	Hours used annually	Years owned	RFV1	RFV2	Purchase price	Fuel type	Hours of life	HP
Sprayer.....	57	24.0	900	3.8	.60	.65	.000251	1.80	50	10.0	.600	.885	830	0	1,000	0
Sprayer.....	58	50.0	1,900	3.8	.60	.65	.000251	1.80	50	10.0	.600	.885	1,750	0	1,000	0
Anhydrous applic.....	59	24.0	700	4.0	.72	.65	.000251	1.80	50	10.0	.600	.885	640	0	1,000	0
Anhydrous applic.....	60	30.0	800	4.0	.72	.65	.000251	1.80	50	10.0	.600	.885	740	0	1,000	0
Dry fert. spreader.	61	8.0	750	4.0	.72	.65	.000251	1.80	50	10.0	.600	.885	690	0	1,000	0
Dry fert. spreader.	62	24.0	2,000	4.0	.72	.65	.000251	1.80	50	10.0	.600	.885	1,840	0	1,000	0
Dry fert. spreader.	63	34.0	3,000	4.0	.72	.65	.000251	1.80	50	10.0	.600	.885	2,760	0	1,000	0
Drill w/fertilizer.	64	10.0	2,900	4.0	.72	.65	.000251	1.80	50	10.0	.600	.885	2,670	0	1,000	0
Drill w/fertilizer.	65	12.0	3,180	4.0	.72	.65	.000251	1.80	50	10.0	.600	.885	2,920	0	1,000	0
Drill w/fertilizer.	66	24.0	5,565	4.0	.72	.65	.000251	1.80	50	10.0	.600	.885	5,400	0	1,000	0
Drill w/fertilizer.	67	36.0	7,500	4.0	.72	.65	.000251	1.80	50	10.0	.600	.885	6,900	0	1,000	0
Drill w/fertilizer.	68	8.0	2,200	4.0	.72	.65	.000251	1.80	50	10.0	.600	.885	2,020	0	1,000	0
Drill w/fertilizer.	69	24.0	5,200	4.0	.72	.65	.000251	1.80	50	10.0	.600	.885	4,780	0	1,000	0
Drill w/fertilizer.	70	30.0	6,500	4.0	.72	.65	.000251	1.80	50	10.0	.600	.885	5,980	0	1,000	0
Potato planter.....	71	6.0	4,000	4.0	.70	.80	.000631	1.60	60	10.0	.600	.885	3,680	0	1,200	0
Potato planter.....	72	12.0	8,500	4.0	.67	.80	.000631	1.60	60	10.0	.600	.885	7,820	0	1,200	0
Digger-inverter.....	73	6.0	1,500	3.0	.76	1.00	.002510	1.60	100	8.0	.600	.885	1,380	0	1,500	0
Cultipacker.....	74	10.0	1,300	4.0	.80	1.00	.000251	1.80	50	10.0	.600	.885	1,200	0	1,000	0
Diker.....	75	30.0	300	4.0	.67	.80	.000631	1.60	60	10.0	.600	.885	280	0	1,000	0
Cultipacker.....	76	30.0	3,700	4.0	.80	1.00	.000251	1.80	50	10.0	.600	.885	3,400	0	1,000	0
Tandem disk.....	77	14.0	4,500	4.0	.83	.65	.000251	1.80	100	10.0	.600	.885	4,140	0	2,000	0
Springtooth.....	78	24.0	1,000	4.2	.70	.65	.000251	1.80	100	10.0	.600	.885	920	0	2,000	0
Cultimulcher.....	79	12.0	5,500	4.0	.80	1.00	.000251	1.80	300	6.0	.600	.885	5,000	0	2,000	0
Planter.....	80	12.0	2,000	4.0	.67	.80	.000631	1.60	60	10.0	.600	.885	1,840	0	1,200	0
Offset disk.....	84	8.0	1,600	3.8	.83	.65	.000251	1.80	100	10.0	.600	.885	1,470	0	2,000	0
Chisel.....	85	12.0	2,600	4.1	.80	.65	.000251	1.80	100	10.0	.600	.885	2,390	0	2,000	0
Sickle mower.....	87	7.0	900	4.3	.81	1.80	.002510	1.30	50	10.0	.600	.855	830	0	1,000	0
PTO baler.....	88	6.0	3,090	3.0	.67	.85	.002510	1.30	100	8.0	.560	.885	2,840	0	2,000	0
Silage chopper.....	89	12.0	4,850	3.5	.80	.85	.002510	1.30	100	10.0	.600	.855	4,460	0	2,000	0
Hay loader.....	90	8.0	600	4.0	.40	1.00	.002510	1.30	100	8.0	.600	.855	550	0	1,000	0
Forage wagon.....	91	12.0	3,200	3.5	.80	.85	.002510	1.30	100	10.0	.600	.855	2,940	0	2,000	0
Gopher machine.....	92	20.0	1,300	4.0	.75	.65	.000251	1.80	50	10.0	.600	.855	1,200	0	1,000	0
Rake.....	93	8.0	910	4.5	.75	1.00	.002510	1.30	80	8.0	.600	.855	840	0	1,000	0
Land plane.....	94	10.0	800	3.0	.83	.60	.000251	1.30	50	10.0	.600	.885	740	0	2,000	0

SOURCE: Natural Resource Economics Division, Economic Research Service,
U.S. Department of Agriculture, Corvallis, Oregon.

factor represents an estimate of discounts received on machinery purchases, and may vary considerably from year to year and area to area.

4. Speed - the typical speed the machine travels in the field when performing a task, expressed in miles per hour. Average speeds of machines are found in table 1, page 292, of the Agricultural Engineers Yearbook [1], and on page 5 of Bowers [2]. After review, the average speeds found in these sources were adjusted downward to more closely approximate the actual speeds experienced by farmers in Oregon. In the crop budget generator program, equipment speed determines performance rate per acre unless a tractor is used with custom equipment, as when a farmer uses his tractor with a custom fertilizer applicator; then the performance rate is determined by the tractor speed.
5. Field efficiency - this variable is the ratio of the actual effectiveness of a machine to its theoretical effectiveness, expressed as a decimal fraction. Field efficiencies of machines are found in table 1, page 292, of the Agricultural Engineers Yearbook [1], and on page 5 of Bowers [2].
6. RC1 - a repair cost variable which is the ratio of total accumulated repair costs to initial list price for the entire life of the machine. The American Society of Agricultural Engineers has adapted the equation used in the budget generating program, and values for RC1 may be found in table 2, page 294, of the Agricultural Engineers Yearbook [1], and on page 14 in the Appendix of Bowers [2].
7. RC2 - a variable that helps determine the repair rate curve for a specific machine. These values are found in the same source as RC1.

8. RC3 - an exponent variable which, in conjunction with RC2, determines the shape for the repair curve for a specific machine. Values for RC3 are also found in the above sources.
9. Hours used annually - the average number of hours a machine is used each year. Hours used annually varies considerably from machine to machine and farm to farm. The estimates used in the budgets are shown in column 9 of table 1.
10. Years owned - the average number of years a machine is owned before it is traded or sold. Estimates used in these budgets are shown in column 10 of table 1.
11. RFV1 - this remaining farm value variable is the percentage of original value that remains after the first year's depreciation occurs, expressed as a decimal fraction. These values are found on Appendix page 41 of Bowers [2], and Section 5.2.1.3, page 289, of the Agricultural Engineers Yearbook [1].
12. RFV2 - remaining farm value variable, which is a component of the standard double declining balance equation. The values are found in the same source as RFV1.
13. Purchase price - the actual price paid for a machine. Purchase price data were collected from machinery dealers. For those machines that only list price could be obtained, a factor of .919 was used to estimate purchase price. Again, this factor represents an estimate of discounts received on machinery purchases, and may vary considerably from year to year and area to area.
14. Fuel type - the type of fuel - gasoline, LP gas, or diesel - that the machine uses.
15. Hours of life - this variable is the number of hours of expected mechanical life. These values are found on Appendix page 13 of Bowers [2], and table 2, page 294, of the Agricultural Engineers Yearbook [1].

16. HP - this variable is the drawbar horsepower of tractors and other self-propelled equipment. These data were obtained from the factory specifications.

The data presented in table 1 are used in the crop budget generator program cost equations presented in Appendix I, along with fuel, interest, and insurance costs, to calculate the total fixed and variable costs and the hours per acre performance rates of each item of equipment. Machinery fixed and variable costs and hours per acre performance rates are presented in table 2. Fuel, interest, insurance, and miscellaneous variables used in calculating machinery cost in the crop budget generator program are shown in table 3.

PRICE VECTOR DATA

The price vector data presented in table 4 are stored in a computer file for use in all crop budgets. Use of the price vector technique greatly facilitates updating budgets, because the price data can be adjusted in this file and incorporated into all budgets in a single run of the computer program. Price data included in this file have a 1974 base.

IRRIGATION COST PER ACRE

The present computer program does not have the capability of computing the various variable and fixed costs of on-farm irrigation systems. Therefore, irrigation system costs are calculated for representative acres and entered as cost per acre-inch of water applied. The computer program multiplies the acre-inch costs by the number of acre-inches of irrigation water used, shown on line 49 of the C tables, to arrive at the irrigation system costs per acre for fuel, repairs, ownership, and capital. Acre-inch costs for depreciation, interest, , repair, and fuel of the irrigation systems used in the budget are shown in table 5.

Table 2.--Machinery fixed and variable costs per hour, Oregon, 1974

Machine	Code	Depreciation	Interest	Insurance	cost per hour					Total fixed	Repair	Fuel	Lubricant	Total variable	Hours per acre
					Tax	Repair	Fuel	Lubricant	Total variable						
Wheel tractor.....	1	.781	.608	.046	.115	.941	.860	.129	1.483					1.483	1.000
Wheel tractor.....	2	.885	.689	.052	.130	1.067	1.174	.176	1.911					1.911	1.000
Wheel tractor.....	3	1.045	.891	.067	.169	1.381	1.363	.204	2.293					2.293	1.000
Wheel tractor.....	4	2.047	1.716	.129	.337	2.513	2.481	.372	4.473					4.473	1.000
Crawler tractor.....	5	3.815	3.198	.240	.629	4.684	2.283	.342	3.895					3.895	1.000
Crawler tractor.....	6	2.606	2.184	.164	.429	3.199	1.538	.231	2.636					2.636	1.000
Crawler tractor.....	7	3.815	3.198	.240	.629	4.684	2.283	.342	3.895					3.895	1.000
Wheel tractor.....	8	1.609	1.250	.094	.237	1.939	1.968	.295	3.280					3.280	1.000
Wheel tractor.....	9	1.145	.891	.067	.169	1.381	1.363	.204	2.293					2.293	1.000
SP combine.....	13	9.396	5.970	.448	1.216	11.059	4.353	.740	10.026					10.026	.293
SP combine hill.....	14	13.067	8.309	.623	1.692	15.382	5.427	.814	12.308					12.308	.257
SP combine.....	15	10.501	6.680	.501	1.360	12.362	5.427	.814	11.121					11.121	.228
SP swather.....	16	9.816	5.887	.442	1.227	11.484	1.678	.252	2.471					2.471	.198
SP swather.....	17	8.794	5.282	.396	1.100	10.290	2.162	.324	3.194					3.194	.170
SP combine.....	18	9.080	5.776	.433	1.176	10.689	5.080	.762	10.063					10.063	.342
NB plow 3-16.....	30	2.157	1.273	.095	.267	2.520	0	0	.235					.235	.678
NB plow 4-15.....	31	1.262	.580	.043	.110	1.416	0	0	.349					.349	.512
NB plow 5-16.....	32	1.511	.693	.052	.132	1.695	0	0	.416					.416	.407
NB plow 6-16.....	33	1.930	.886	.066	.169	2.165	0	0	.532					.532	.339
NB plow 10-16.....	34	2.632	1.208	.091	.230	2.953	0	0	.726					.726	.204
Corrugator.....	35	.444	.262	.020	.055	.519	0	0	.172					.172	.238
Corrugator.....	36	.888	.525	.039	.110	1.037	0	0	.344					.344	.119
Offset disk.....	37	5.202	3.071	.230	.644	6.076	0	0	1.306					1.306	.145
Offset disk.....	38	6.688	3.949	.296	.828	7.813	0	0	1.679					1.679	.109
Tandem disk.....	39	1.259	.755	.056	.156	1.471	0	0	.317					.317	.311
Tandem disk.....	40	2.601	1.536	.115	.322	3.038	0	0	.653					.653	.248
Tandem disk.....	41	5.202	3.071	.230	.644	6.076	0	0	1.306					1.306	.124
Rod weeder.....	42	3.393	1.963	.147	.415	3.955	0	0	.798					.798	.104
Rod weeder.....	43	3.860	2.280	.171	.478	4.509	0	0	.970					.970	.069
Rod weeder.....	44	4.604	2.719	.204	.570	5.377	0	0	1.156					1.156	.059
Spike harrow.....	45	.339	.201	.015	.042	.396	0	0	.086					.086	.234
Spike harrow.....	46	.564	.334	.205	.070	.659	0	0	.144					.144	.140
Spike harrow.....	47	.845	.502	.038	.105	.988	0	0	.216					.216	.094
Spike harrow.....	48	1.128	.669	.050	.140	1.318	0	0	.287					.287	.070
Spike harrow.....	49	1.369	.812	.061	.170	1.600	0	0	.349					.349	.056
Sweep CC cultivator.....	50	1.990	1.784	.134	.422	2.546	0	0	.660					.660	.159
Sweep CC cultivator.....	51	2.434	2.181	.164	.516	3.114	0	0	.803					.803	.119
Float.....	52	1.115	.658	.049	.138	1.302	0	0	.011					.011	.276
Row cultivator.....	53	.557	.329	.025	.069	.651	0	0	.215					.215	.573

continued

Table 2.—Machinery fixed and variable costs per hour, Oregon, 1974 (continued)

Machine	Code	Depreciation	Interest	Insurance	Tax	Total fixed	Repair	Fuel	Lubricant	Total variable	Hourly rate
cost per hour											
Row cultivator.....	54	1.342	.791	.059	.166	1.567	.517	0	0	.517	.286
Row cultivator.....	55	2.157	1.273	.095	.267	2.520	.832	0	0	.832	.215
Roller.....	56	1.480	.875	.066	.183	1.729	.528	0	0	.528	.257
Sprayer.....	57	1.342	.791	.059	.166	1.567	.336	0	0	.336	.151
Sprayer.....	58	2.828	1.669	.125	.350	3.303	.709	0	0	.709	.072
Amhydrous applicator.....	59	1.032	.611	.046	.128	1.206	.261	0	0	.261	.119
Amhydrous applicator.....	60	1.197	.705	.053	.148	1.398	.298	0	0	.298	.095
Dry fertilizer spreader....	61	1.115	.658	.049	.138	1.302	.280	0	0	.280	.358
Dry fertilizer spreader....	62	2.973	1.755	.132	.368	3.472	.746	0	0	.746	.119
Dry fertilizer spreader....	63	4.459	2.612	.197	.552	5.208	1.119	0	0	1.119	.084
Drill w/fertilizer.....	64	4.314	2.546	.191	.534	5.039	1.082	0	0	1.082	.286
Drill w/fertilizer.....	65	4.715	2.786	.209	.584	5.508	1.186	0	0	1.186	.239
Drill w/fertilizer.....	66	8.832	5.107	.383	1.080	10.295	2.076	0	0	2.076	.119
Drill w/fertilizer.....	67	11.147	6.581	.494	1.380	13.021	2.798	0	0	2.798	.080
Drill w/fertilizer.....	68	3.262	1.927	.145	.404	3.810	.821	0	0	.821	.358
Drill w/fertilizer.....	69	7.721	4.560	.342	.956	9.019	1.940	0	0	1.940	.119
Drill w/fertilizer.....	70	9.661	5.704	.428	1.196	11.285	2.425	0	0	2.425	.095
Potato planter.....	71	4.954	2.925	.219	.613	5.787	1.759	0	0	1.759	.491
Potato planter.....	72	10.528	6.215	.466	1.303	12.298	3.719	0	0	3.719	.257
Digger-inverter.....	73	1.302	.687	.052	.138	1.491	.273	0	0	.273	.603
Cultipacker.....	74	1.940	1.144	.086	.240	2.266	.746	0	0	.746	.258
Diker.....	75	.378	.222	.017	.047	.442	.177	0	0	.177	.103
Cultipacker.....	76	5.491	3.243	.243	.680	6.415	2.123	0	0	2.123	.086
Tandem disk.....	77	3.344	1.974	.148	.414	3.906	.839	0	0	.839	.177
Springleoth.....	78	.743	.439	.033	.092	.868	.187	0	0	.187	.117
Cult-mulcher.....	79	1.897	.878	.066	.167	2.129	2.526	0	0	2.526	.215
Planter.....	80	2.477	1.462	.110	.307	2.894	.880	0	0	.880	.257
Offset disk.....	84	1.187	.701	.053	.147	1.387	.298	0	0	.298	.327
Chisel.....	85	1.930	1.140	.085	.239	2.255	.485	0	0	.485	.210
Stickle mower.....	87	1.435	.754	.057	.166	1.657	.131	0	0	.131	.338
Potato baler.....	88	2.736	1.396	.105	.284	3.125	.100	0	0	.100	.684
Silage chopper.....	89	3.852	2.027	.152	.446	4.451	.167	0	0	.167	.246
Hay loader.....	90	.559	.261	.020	.055	.634	.056	0	0	.056	.645
Forage wagon.....	91	2.539	1.336	.100	.294	2.933	.110	0	0	.110	.246
Copier machine.....	92	2.074	1.090	.082	.240	2.396	.485	0	0	.485	.138
Rake.....	93	1.069	.498	.037	.105	1.211	.080	0	0	.080	.306
Land plane.....	94	1.197	.705	.053	.148	1.398	.016	0	0	.016	.331

SOURCE: Calculated in crop budget generator.

Table 3.--Default parameters used in computations of machinery and other costs, Oregon, 1974

Item	Code number	Value
Price per gallon of gasoline.....	1	.46
Price per gallon of LP gas.....	2	.21
Price per gallon of diesel.....	3	.35
Interest rate.....	6	.08
Insurance rate (price/dollar of average investment insured).....	7	.0006
Tax rate (price/dollar of purchase value).....	8	.01
Price of machinery labor/hour.....	10	3.00
Price of other labor/hour.....	11	3.00
Price of irrigation labor/hour.....	12	3.00
Equipment insurance rate (price/dollar of average investment).....	15	.06
Equipment tax rate (price/dollar of average value).....	17	.01
Factor by which machine hours are multiplied to obtain tractor hours.	19	1.1
Factor by which tractor hours are multiplied to obtain machinery labor.....	20	1.1
Factor by which self-powered machine hours are multiplied to obtain self-powered machinery labor.....	21	1.2

SOURCE: Natural Resource Economics Division, Economic Research Service, U.S. Department of Agriculture, Corvallis, Oregon.

Table 4.--Oregon price vector, 1974 base

Item	Unit	Code number	Price dollars
Rye grass seed.....	lbs.	48	.156
Rye grass pasture.....	ALUMs	49	4.50
Clover-timothy hay.....	tons	50	20.00
Rotation hay.....	tons	51	23.00
Small grain hay.....	tons	52	26.66
Wild hay.....	tons	53	17.50
Onions.....	cwt.	54	1.90
Custom onion seeding.....	acre	55	19.00
Hops.....	lbs.	64	.57
Sugar beets.....	tons	65	19.81
Potatoes.....	cwt.	66	2.50
Dry peas.....	cwt.	67	4.53
Bush beans.....	tons	69	165.00
Winter barley.....	bu.	71	1.58
Spring barley.....	bu.	72	1.58
Oats.....	bu.	74	.97
Winter wheat.....	bu.	76	2.64
Spring wheat.....	bu.	77	2.64
Alfalfa hay.....	tons	81	36.70
Alfalfa seed.....	lbs.	82	.385
Corn silage.....	tons	85	11.55
Sweet corn.....	tons	86	40.00
Seed corn.....	cwt.	87	16.00
Field corn.....	bu.	88	2.04
Clover grass hay.....	tons	90	35.00
Clover grass silage.....	tons	91	11.50
Clover grass pasture.....	ALUMs	92	5.00
Beef, live weight.....	lbs.	98	.368
Rye grass seed.....	lbs.	148	.27
Timothy seed.....	lbs.	149	.28
Red clover seed.....	lbs.	150	.54
Small grain hay seed.....	lbs.	152	.06
Sugar beet seed.....	lbs.	165	2.20
Seed potatoes.....	cwt.	166	2.80
Dry pea seed.....	cwt.	167	5.00
Dry bean seed.....	cwt.	168	12.00
Winter barley seed.....	lbs.	171	.08
Spring barley seed.....	lbs.	172	.08
Oats seed.....	lbs.	174	.09
Winter wheat seed.....	lbs.	176	.103
Spring wheat seed.....	lbs.	177	.103
Alfalfa seed.....	lbs.	181	.64
Corn seed.....	lbs.	185	.241
Sweet corn seed.....	lbs.	186	.80
Rye grass seed.....	lbs.	189	.27
Orchardgrass seed.....	lbs.	190	.65
New Zealand white clover seed.....	lbs.	191	2.00
Lotus major big trefoil seed.....	lbs.	192	2.25
Inoculate.....	lbs.	201	1.63
Gypsum ($\text{CaSO}_4, 2\text{H}_2\text{O}$).....	lbs.	209	.03
Sulfur.....	lbs.	210	.11
Nitrogen.....	lbs.	212	.28
Phosphorous (P_2O_5).....	lbs.	213	.23
Potassium (K_2O).....	lbs.	215	.15
Zinc.....	lbs.	216	.75

continued

Table 4.—Oregon price vector, 1974 base (continued)

Item	Unit	Code number	Price <u>dollars</u>
Lime.....	lbs.	220	.012
2-4-D herbicide.....	lbs.	251	2.81
Sinox.....	lbs.	256	3.40
Avadex.....	lbs.	257	5.41
Dirow.....	lbs.	258	2.95
Treflan.....	lbs.	259	7.13
Karmex.....	lbs.	260	2.95
Loso herbicide.....	lbs.	261	4.55
Bladex herbicide.....	lbs.	262	3.30
Comite insecticide.....	lbs.	263	5.11
Malathion insecticide.....	lbs.	264	3.63
Burn residue.....	acre	299	2.60
Potato vine removal.....	acre	300	7.20
Custom haul.....	bu.	302	.10
Sweet corn picking & hauling.....	tons	303	10.30
Corn stalk topping.....	acre	304	4.80
Custom combine.....	acre	305	14.50
Custom combine corn.....	acre	306	35.00
Alfalfa establishment.....	acre	307	11.60
Rotation alfalfa establishment.....	acre	308	19.30
Clover-timothy hay establishment.....	acre	309	14.50
Clover-grass hay establishment.....	acre	310	14.50
Custom haul.....	cwt.	312	.15
Custom haul.....	tons	322	3.00
Custom sugar beet seed.....	acre	345	3.50
Custom insect control.....	acre	346	11.60
Weevil control.....	acre	347	8.30
Custom insect control.....	acre	348	2.00
Custom sugar beet haul.....	tons	349	1.50
Custom sugar beet top, dig, & load...	tons	350	1.50
Custom seed potato cut & treat.....	cwt.	351	2.80
Repair irrigation sprinklers.....	acre	355	7.35
Custom planting.....	acre	358	3.70
Tassling seed corn.....	acre	360	90.00
Custom fertilizer application.....	acre	361	2.60
Custom weed control.....	acre	364	2.85
Custom weed control, sugar beets.....	acre	365	10.00
Custom weed control, onions & alfalfa seed.....	acre	366	13.80
Custom stubble buster.....	acre	368	3.70
Ditch repair.....	acre	369	13.80
Alfalfa defoliation.....	acre	370	4.80
Rodent control.....	acre	371	1.80
Custom airplane spray.....	acre	372	2.50
Custom spray.....	acre	373	2.60
Custom herbicide.....	acre	374	2.20
Custom herbicide.....	acre	375	9.50
Potato digging.....	cwt.	376	.25
Thin & weed.....	acre	377	31.00
Custom hoe.....	acre	378	16.80
Fumigation.....	acre	379	162.00
Top onions.....	cwt.	380	.28
Harvest onions.....	cwt.	381	.24
Onion storage.....	cwt.	382	.12
Alfalfa seed bee habitat.....	acre	383	6.90
Bag & tag alfalfa seed.....	cwt.	384	1.25
Custom swathing.....	acre	385	4.50
Custom baling.....	tons	388	7.35
Custom stack.....	tons	389	4.50
Custom remove & stack.....	tons	390	6.50
Disease control.....	acre	392	14.50

SOURCE: Natural Resource Economics Division, Economic Research Service,
U.S. Department of Agriculture, Corvallis, Oregon.

Table 5.--Irrigation system costs and labor requirements,
by acre inch

Irrigation system	Code	Depreciation	Interest	Total fixed	Repair
----- <u>cost per acre inch</u> -----					
Hand move.....	1	.025	.22	.245	.013
Side move.....	2	.047	.40	.447	.024
Side move tow...	3	.047	.40	.447	.024
Self-propelled..	4	.055	.47	.525	.028
Surface.....	5	.022	.19	.212	.011

	Code		Fuel	Total variable	Hours
Hand move.....	1		.076	.089	.211
Side move.....	2		.142	.166	.063
Side move tow...	3		.142	.166	.047
Self-propelled..	4		.166	.194	.022
Surface.....	5		.066	.077	.123

SOURCE: Natural Resource Economics Division, Economic Research Service, U.S. Department of Agriculture, Corvallis, Oregon.

IRRIGATION LABOR

Irrigation labor is entered as hours per inch of water applied. The computer program multiplies hours per acre-inch by the acre inches of water applied to obtain total hours of labor required per acre. Irrigation labor cost per hour, listed as default parameter 12 in table 3, is then multiplied by total hours to obtain irrigation labor cost per acre. Labor requirements, by irrigation system, are shown in the last column of table 5. Type of irrigation system must be specified in each budget.

LIMITATIONS

It is recognized that the crop enterprise budgets do not cover all of the tillage practices in an area, or the alternative tillage practices used on a particular farm from year to year. Each budget represents a specific set of assumptions, with respect to production practices and yield levels, that might be expected with current levels of management and technology in a land resource area. Thus, the crop production cost data associated with land resource areas are likely to be most useful in "making first approximations" when evaluating production opportunities. This does not negate the value of the budgets for planning, because they contain some of the basic data that allow a systematic framework to be used in evaluating alternative uses of farm resources.

These budgets are partial budgets, as they do not include irrigation water, land, and overhead costs, nor are the taxes varied to reflect local differences in tax rates. Costs associated with these items vary considerably by location, source of irrigation water, farm size, level of management, etc. Excluding these costs results in a better evaluation of the relative efficiency of resource use. Measuring relative efficiency of resource use is essential to determining optimum resource combinations to produce given levels of production.

Performance rates of the various equipment were held constant across all crops and soils. The use of an average performance rate for all crops and soils was necessary, due to limited performance rate data. Further, presenting data in the various tables to two and three decimal places was done merely for mathematical convenience, and does not imply that degree of accuracy.

CROP BUDGETS

Three tables are presented for each crop budget. The first, labeled A, shows a detailed breakdown of the costs and returns per acre of crop. The B tables show only variable preharvest and harvest costs. The C tables

present the input data to the crop budget generator program, by month, in a production cycle.

As an example of data presented in all budgets, table 6A is a budget for producing irrigated improved clover-grass hay in Land Resource Area 001. For this crop, value of production is shown as \$204.75 per acre. Total operating costs, total interest charges on capital, total ownership costs, and total labor costs are \$69.69, \$11.04, \$12.20, and \$18.07 per acre, respectively. Net returns are shown in progressive breakdowns, with returns to water, land, overhead, risk, and management being \$93.75 per acre.

Table 6B presents more detailed variable cost information for both preharvest and harvest costs. Interest charges on capital, ownership costs, and value of production are omitted from this table. Total variable preharvest and harvest costs are \$58.59 and \$31.50 per acre, respectively.

Table 6C presents crop production, purchased operating inputs, machinery requirements, and irrigation water use per acre, by month. Monthly data are necessary for the annual operating capital calculations in the crop budget generator program.

Table 6A

IRRIGATED CLOVER-GRASS HAY: PRODUCTION COSTS AND RETURNS
 LAND RESOURCE AREA 001 OREGON
 COORDINATED COMPREHENSIVE JOINT PLAN, PACIFIC NORTHWEST REGION

CATEGORY	UNITS	PRICE	QUANTITY	VALUE
PRODUCTION				
CLOVER-GRASS HAY	TON	35.000	1.750	61.25
CLOVER-GRASS PAS	AUMS	5.000	8.000	40.00
CLOVER-GRASS SIL	TON	11.500	9.000	103.50
TOTAL RECEIPTS				204.75
OPERATING INPUTS				
CUSTOM Baling	TON	7.350	1.750	12.86
NITROGEN	LBS.	.290	84.000	27.52
PHOSPHORUS	LBS.	.232	60.000	13.90
CUST STACK MOV.	TON	6.500	1.750	11.38
TRACTOR FUEL COST	ACRE			2.75
TRACT REPAIR COST	ACRE			1.32
TRACTOR LUBE COST	ACRE			.41
EQUIP REPAIR COST	ACRE			1.50
IRRIG FUEL COST	ACRE			1.45
IRRIG REPAIR COST	ACRE			.31
TOTAL OPERATING COST				69.69
RETURNS TO LAND, LABOR, CAPITAL, MACHINERY, WATER, OVERHEAD, RISK, AND MANAGEMENT				135.06
CAPITAL COST				
ANNUAL OPERATING CAPITAL		.080	29.336	2.35
TRACTOR INVESTMENT		.090	20.137	1.61
EQUIPMENT INVESTMENT		.080	21.991	1.76
IRRIGATION SYSTEM INVESTMENT		.080	66.500	5.32
TOTAL INTEREST CHARGE				11.04
RETURNS TO LAND, LABOR, MACHINERY, WATER, OVERHEAD, RISK AND MANAGEMENT				124.02
OWNERSHIP COST (DEPRECIATION, TAXES, INSURANCE)				
TRACTOR	DDL.			2.50
EQUIPMENT	DDL.			7.76
IRRIGATION SYSTEM	DDL.			5.04
TOTAL OWNERSHIP COST				15.30
RETURNS TO LAND, LABOR, OVERHEAD, WATER, RISK AND MANAGEMENT				111.92
LABOR COST				
MACHINERY LABOR	HR.	3.000	2.579	7.74
IRRIGATION LABOR	HR.	3.000	3.444	10.33
TOTAL LABOR COST				18.07
RETURNS TO LAND, OVERHEAD, WATER, RISK AND MANAGEMENT				93.75

SOURCE: NATURAL RESOURCE ECONOMICS DIVISION, ERS, USDA, CORVALLIS, OREGON
 MACHINERY OPERATIONS BASED ON DATA DEVELOPED BY THE SOIL CONSERVATION SERVICE

BUDGET IDENTIFICATION NUMBER --- PD 120000 15151
 ANNUAL CAPITAL MONTH 3

Table 6B

IRRIGATED CLOVER-GRASS HAY: PRODUCTION COSTS AND RETURNS
 LAND RESOURCE AREA 001 OREGON
 COORDINATED COMPREHENSIVE JOINT PLAN, PACIFIC NORTHWEST REGION

CATEGORY	UNIT	QUANTITY	PRICE	VALUE
			DOLLARS	DOLLARS
PREHARVEST COSTS				
MACHINERY LABOR	HOUR	1.300	3.000	3.899
IRRIGATION LABOR	HOUR	3.444	3.000	10.332
NITROGEN	LBS.	94.000	.291	23.520
PHOSPHORUS	LBS.	60.000	.230	13.800
TRACTOR FUEL LUBE AND REPAIRS	ACRE	1.000	2.254	2.254
EQUIPMENT FUEL LUBE AND REPAIRS	ACRE	1.000	.301	.301
IRRIGATION FUEL LUBE AND REPAIRS	ACRE	1.000	2.156	2.156
INTEREST ON OPERATING CAPITAL		23.934	.150	3.589
TOTAL PREHARVEST COSTS	ACRE	---	---	53.534
HARVEST COSTS				
MACHINERY LABOR	HOUR	1.280	7.200	3.939
CUSTOM BAILING	TON	1.750	7.380	12.913
CUSTOM STACK MOV.	TON	1.750	6.500	11.375
TRACTOR FUEL LUBE AND REPAIRS	ACRE	1.000	2.223	2.223
EQUIPMENT FUEL LUBE AND REPAIRS	ACRE	1.000	1.197	1.197
TOTAL HARVEST COSTS				
PER HARVESTED ACRE (100)	ACRE	---	---	31.497
TOTAL HARVEST COSTS				
PER PLANTED ACRE	ACRE	---	---	31.497
TOTAL VARIABLE COST PER PLANTED ACRE	ACRE			60.032
YIELD PER HARVESTED ACRE 1.751 TON				
YIELD PER PLANTED ACRE 1.750 TON				

SOURCE: NATURAL RESOURCE ECONOMICS DIVISION, ERS, USDA, CORVALLIS, OREGON
 MACHINERY OPERATIONS BASED ON DATA DEVELOPED BY THE SOIL CONSERVATION SERVICE

Table 6C

BUDGET IDENTIFICATION NUMBER 00 120000 15151												ANNUAL CAPITAL MONTH 8												BUDGET RECORD NUMBER 0											
IRRIGATED CLOVER-GRASS HAY: PRODUCTION COSTS AND RETURNS																																			
LAND RESOURCE AREA 091 OREGON																																			
COORDINATED COMPREHENSIVE JOINT PLAN, PACIFIC NORTHWEST REGION																																			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18																		
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	PRICE	WEIGHT	UNIT	ITEM	TYPE	CONT																		
PRODUCTION																																			
1 CLOVER-GRASS HAY																																			
0	0	0	0	0	0	0	1.75	0	0	0	0	0	0	0	3	90	2	9																	
2 CLOVER-GRASS PAS																																			
0	0	.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.50	0	0	0	0	10	92	2	0																	
3 CLOVER-GRASS SIL																																			
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	91	2	9																	
OPERATING INPUTS																																			
RATE/UNIT																																			
11 COSTO4 BAILING																																			
0	0	0	0	0	0	0	1.75	0	0	0	0	0	0	0	3	348	3	9																	
12 NITROGEN																																			
0	0	0	0	0	0	0	0	0	0	0	0	.240	0	0	12	212	3	0																	
13 PHOSPHORUS																																			
0	0	0	0	0	0	0	0	0	0	0	0	.230	0	0	12	213	3	0																	
14 COST STACK MOV.																																			
0	0	0	0	0	0	0	1.75	0	0	0	0	0	0	0	3	390	3	9																	
MACHINERY REQUIREMENTS																																			
TIMES OVER																																			
XXXXX POWER MACH UNIT CODE																																			
XXXXX XXXXX																																			
38 OY FEET SPREAD																																			
0	0	1.00	0	0	0	1.00	0	1.00	0	0	0	0	0	0	2	61	4	9																	
39 SICKLE MOWER																																			
0	0	0	0	0	0	0	.70	0	0	0	0	0	0	0	2	87	4	9																	
40 RAKE																																			
0	0	0	0	0	0	0	1.60	0	0	0	0	0	0	0	2	93	4	9																	
41 SILAGE CHOPPER																																			
0	0	0	0	.40	0	0	0	0	0	0	0	0	0	0	2	89	4	9																	
42 FORAGE WAGON																																			
0	0	0	0	.40	0	0	0	0	0	0	0	0	0	0	2	91	4	9																	
49 ACIN IRRIG, WATER																																			
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																	

SOURCE: NATURAL RESOURCE ECONOMICS DIVISION, FRS, USDA, CORVALLIS, OREGON
MACHINERY OPERATIONS BASED ON DATA DEVELOPED BY THE SOIL CONSERVATION SERVICE

Table 7A

NON-IRRIGATED IMPROVED CLOVER-GRASS HAY-OFYLAND: PRODUCTION COSTS AND RETURNS
LAND RESOURCE AREA 801 OREGON
COORDINATED COMPREHENSIVE JOINT PLAN, PACIFIC NORTHWEST REGION

CATEGORY	UNITS	PRICE	QUANTITY	VALUE
PRODUCTION				
CLOVER-GRASS HAY	TON	35.000	2.000	70.00
CLOVER-GRASS PAS	AUMS	5.000	2.000	10.00
TOTAL RECEIPTS				80.00
OPERATING INPUTS				
FYE GRASS SEED	LBS.	.270	3.000	.81
ARCHARD GRASS SE	LBS.	.650	12.000	7.80
CUST. FEET. APO.	ACRE	2.500	1.000	2.50
CUSTOM PLANTING	ACRE	3.700	1.000	3.70
CUSTOM FALING	TON	7.350	2.000	14.70
NITROGEN	LBS.	.290	40.000	11.60
P-D-PHOSPHORUS	LBS.	.220	50.000	11.00
POTASSIUM	LBS.	.150	80.000	12.00
HEX ZELAND WH.OCL	LBS.	2.000	3.000	6.00
LOTUS MAJOR SEED	LBS.	2.250	1.000	2.25
CUST. STACK MOV.	TON	6.500	2.000	13.00
TRACTOR FUEL COST	ACRE			3.13
TRACTOR REPAIR COST	ACRE			1.47
TRACTOR LUBE COST	ACRE			.46
EQUIP REPAIR COST	ACRE			3.45
TOTAL OPERATING COST				100.34
RETURN TO LAND, LABOR, CAPITAL, MACHINERY, OVERHEAD, RISK, AND MANAGEMENT				-20.34
CAPITAL COST				
ANNUAL OPERATING CAPITAL		.090	61.971	5.58
TRACTOR INVESTMENT		.090	22.807	2.05
EQUIPMENT INVESTMENT		.090	27.505	2.20
TOTAL INTEREST CHARGE				9.83
RETURNS TO LAND, LABOR, MACHINERY, OVERHEAD, RISK AND MANAGEMENT				-20.70
OWNERSHIP COST (DEPRECIATION, TAXES, INSURANCE)				
TRACTOR	DDL.			2.30
EQUIPMENT	DDL.			7.50
TOTAL OWNERSHIP COST				9.80
RETURNS TO LAND, LABOR, OVERHEAD, RISK AND MANAGEMENT				-14.10
LABOR COST				
MANAGEMENT LABOR	HR.	3.200	2.349	7.47
TOTAL LABOR COST				7.47
RETURN TO LAND, OVERHEAD, RISK AND MANAGEMENT				-4.72

ED. FOR: NATURAL RESOURCE ECONOMICS DIVISION, FRS, USDA, CORVALLIS, OREGON
MACHINERY OPERATIONS BASED ON DATA DEVELOPED BY THE SOIL CONSERVATION SERVICE

REPORT IDENTIFICATION NUMBER --- 87-10000-10127
NATURAL RESOURCE ECONOMICS DIVISION

Table 7B

NON-IRRIGATED IMPROVED CLOVER-GRASS HAY-DRYLAND: PRODUCTION COSTS AND RETURNS
 LAND RESOURCE AREA 001 OREGON
 COORDINATED COMPREHENSIVE JOINT PLAN, PACIFIC NORTHWEST REGION

CATEGORY	UNIT	QUANTITY	PRICE	VALUE
			DOLLARS	DOLLARS
PREHARVEST COSTS				
MACHINERY LABOR	HOURL	1.740	3.000	5.219
RYE GRASS SEED	LBS.	3.000	.270	.810
ORCHARD GRASS SE	LBS.	12.000	.650	7.800
CUST. FERT. APP.	ACRE	1.000	2.600	2.600
CUSTOM PLANTING	ACRE	1.000	3.700	3.700
NITROGEN	LBS.	40.000	.280	11.200
PHOSPHORUS	LBS.	30.000	.230	6.900
POTASSIUM	LBS.	30.000	.150	4.500
NEW ZELAND WH. CL	LBS.	3.000	2.000	6.000
LOTUS MAJOR SEED	LBS.	1.000	2.250	2.250
TRACTOR FUEL LUBE AND REPAIRS	ACRE	1.000	3.023	3.023
EQUIPMENT FUEL LUBE AND REPAIRS	ACRE	1.000	1.923	1.923
INTEREST ON OPERATING CAPITAL		61.971	.080	4.953
TOTAL PREHARVEST COSTS	ACRE	---	---	79.337
HARVEST COSTS				
MACHINERY LABOR	HOURL	1.149	3.000	3.447
CUSTOM BALING	TON	2.700	7.350	19.850
CUST STACK MOV.	TON	2.000	6.500	13.000
TRACTOR FUEL LUBE AND REPAIRS	ACRE	1.000	1.996	1.996
EQUIPMENT FUEL LUBE AND REPAIRS	ACRE	1.000	.931	.931
TOTAL HARVEST COSTS				
PER HARVESTED ACRE (100)	ACRE	---	---	34.074
TOTAL HARVEST COSTS				
PER PLANTED ACRE	ACRE	---	---	34.074
TOTAL VARIABLE COST PER PLANTED ACRE	ACRE			113.961
YIELD PER HARVESTED ACRE 2.000 TON				
YIELD PER PLANTED ACRE 2.000 TON				

SOURCE: NATURAL RESOURCE ECONOMICS DIVISION, ERS, USDA, CORVALLIS, OREGON
 MACHINERY OPERATIONS BASED ON DATA DEVELOPED BY THE SOIL CONSERVATION SERVICE

[illegible]

SOURCE: NATURAL RESOURCE ECONOMICS DIVISION, FRS, USDA, FORTVALLI, DEFENSE
MACHINERY OPERATIONS BASED ON DATA DEVELOPED BY THE SOIL CONSERVATION SERVICE

Table 8A

NON-IRRIGATED IMPROVED CLOVER-GRASS HAY-DRYLAND: PRODUCTION COSTS AND RETURNS
 LAND RESOURCE AREA 001 OREGON
 COORDINATED COMPREHENSIVE JOINT PLAN, PACIFIC NORTHWEST REGION

CATEGORY	UNITS	PRICE	QUANTITY	VALUE
PRODUCTION				
CLOVER-GRASS HAY	TON	35.000	2.500	87.50
CLOVER-GRASS PAS	AUMS	5.000	6.000	30.00
TOTAL RECEIPTS				117.50
OPERATING INPUTS				
CUST. FEET. APP.	ACRE	2.600	2.000	5.20
CUST. WOOD CONT.	ACRE	2.350	1.000	2.35
CUSTOM BAILING	TON	7.350	2.500	18.38
NITROGEN	LBS.	.240	55.000	13.20
PHOSPHORUS	LBS.	.230	70.000	16.10
CUST STACK MOV.	TON	6.500	2.500	16.25
TRACTOR FUEL COST	ACRE			1.23
TRACT REPAIR COST	ACRE			.59
TRACTOR LUBE COST	ACRE			.13
EQUIP REPAIR COST	ACRE			.93
TOTAL OPERATING COST				77.38
RETURNS TO LAND, LABOR, CAPITAL, MACHINERY, OVERHEAD, RISK, AND MANAGEMENT				40.12
CAPITAL COST				
ANNUAL OPERATING CAPITAL		.030	17.507	1.40
TRACTOR INVESTMENT		.030	3.992	.72
EQUIPMENT INVESTMENT		.030	5.994	.56
TOTAL INTEREST CHARGE				2.68
RETURNS TO LAND, LABOR, MACHINERY, OVERHEAD, RISK AND MANAGEMENT				37.44
OWNERSHIP COST (DEPRECIATION, TAXES, INSURANCE)				
TRACTOR	DOL.			1.11
EQUIPMENT	DOL.			1.30
TOTAL OWNERSHIP COST				2.42
RETURNS TO LAND, LABOR, OVERHEAD, RISK AND MANAGEMENT				35.02
LABOR COST				
MACHINERY LABOR	HR.	3.000	1.149	3.45
TOTAL LABOR COST				3.45
RETURNS TO LAND, OVERHEAD, RISK AND MANAGEMENT				31.57

SOURCE: NATURAL RESOURCE ECONOMICS DIVISION, ERS, USDA, CORVALLIS, OREGON
 MACHINERY OPERATIONS BASED ON DATA DEVELOPED BY THE SOIL CONSERVATION SERVICE

BUDGET IDENTIFICATION NUMBER --- 92 100000 10150
 ANNUAL CAPITAL MONTH ---

Table 8B

NON-IRRIGATED IMPROVED CLOVER-GRASS HAY-DRYLAND: PRODUCTION COSTS AND RETURNS
 LAND RESOURCE AREA 001 OREGON
 COORDINATED COMPREHENSIVE JOINT PLAN, PACIFIC NORTHWEST REGION

CATEGORY	UNIT	QUANTITY	PRICE	VALUE
			DOLLARS	DOLLARS
PREHARVEST COSTS				
MACHINERY LABOR	HOUP	.409	3.000	1.228
CUST. FERT. APP.	ACRE	2.000	2.600	5.200
CUST. WEED CONT.	ACRE	1.000	2.350	2.350
NITROGEN	LBS.	55.000	.230	12.650
PHOSPHORUS	LBS.	70.000	.230	16.100
TRACTOR FUEL LUBE AND REPAIRS	ACRE	1.000	.711	.711
EQUIPMENT FUEL LUBE AND REPAIRS	ACRE	1.000	.445	.445
INTEREST ON OPERATING CAPITAL		17.507	.390	1.401
TOTAL PREHARVEST COSTS	ACRE	---	---	43.615
HARVEST COSTS				
MACHINERY LABOR	HOUP	.739	3.000	2.218
CUSTOM BAILING	TON	2.500	7.350	18.375
CUST. STACK MOV.	TON	2.500	6.500	16.250
TRACTOR FUEL LUBE AND REPAIRS	ACRE	1.000	1.285	1.285
EQUIPMENT FUEL LUBE AND REPAIRS	ACRE	1.000	.486	.486
TOTAL HARVEST COSTS				
PER HARVESTED ACRE(100)	ACRE	---	---	39.614
TOTAL HARVEST COSTS				
PER PLANTED ACRE	ACRE	---	---	39.614
TOTAL VARIABLE COST PER PLANTED ACRE	ACRE			82.229
YIELD PER HARVESTED ACRE		2.500 TON		
YIELD PER PLANTED ACRE		2.500 TON		

SOURCE: NATURAL RESOURCE ECONOMICS DIVISION, EPS, USDA, CORVALLIS, OREGON
 MACHINERY OPERATIONS BASED ON DATA DEVELOPED BY THE SOIL CONSERVATION SERVICE

Table 8C

BUDGET IDENTIFICATION NUMBER				90 100000 10150				ANNUAL CAPITAL MONTH				7				BUDGET RECORD NUMBER				0			
NON-IRRIGATED IMPROVED CLOVER-GRASS HAY-ORPILAND: PRODUCTION COSTS AND RETURNS LAND RESOURCE AREA 001 OREGON COORDINATED COMPREHENSIVE JOINT PLAN, PACIFIC NORTHWEST REGION																							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18						
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	PRICE	WEIGHT	UNIT	ITEM	TYPE	CONT						
PRODUCTION																							
1 CLOVER-GRASS HAY																							
0	0	0	0	0	0	2.50	0	0	0	0	0	55.000	0	3	90	2	3						
2 CLOVER-GRASS PAS																							
0	0	.50	2.00	1.00	0	0	0	1.00	1.00	.50	0	5.000	0	10	92	2	0						
OPERATING INPUTS																							
RATE/UNIT																							
NUMBER OF UNITS																							
PRICE																							
UNITS																							
ITEM CODE																							
TYPE																							
CONT																							
11 CUST. FERT. APP.																							
0	0	0	1.00	0	0	0	1.00	0	0	0	0	2.600	0	7	361	3	0						
12 CUST. WFEI CONT.																							
0	0	0	0	1.00	0	0	0	0	0	0	0	2.950	0	7	364	3	0						
13 CUST. BALING																							
0	0	0	0	0	0	2.50	0	0	0	0	0	7.350	0	3	388	3	0						
14 NITROGEN																							
0	0	0	40.00	0	0	0	16.00	0	0	0	0	.240	0	12	212	3	0						
15 PHOSPHORUS																							
0	0	0	50.00	0	0	0	20.00	0	0	0	0	.230	0	12	213	3	0						
16 CUST STACK MOV.																							
0	0	0	0	0	0	2.50	0	0	0	0	0	6.500	0	3	390	3	0						
MACHINERY REQUIREMENTS																							
TIMES OVER																							
XXXXX																							
POWER																							
MACH																							
UNIT CODE																							
TYPL																							
CONT																							
34 SICKLE MOWER																							
0	0	0	0	0	0	1.00	0	0	0	0	0	0	0	2	87	4	0						
35 RAKE																							
0	0	0	0	0	0	2.00	0	0	0	0	0	0	0	2	93	4	0						

SOURCE: NATURAL RESOURCE ECONOMICS DIVISION, ERS, USDA, CORVALLIS, OREGON
MACHINERY OPERATIONS BASED ON DATA DEVELOPED BY THE SOIL CONSERVATION SERVICE

Table 9A

IRRIGATED ALFALFA HAY: PRODUCTION COSTS AND RETURNS
 LAND RESOURCE AREA 302 OFFSHORE
 COORDINATED COMPREHENSIVE JOINT PLAN, PACIFIC NORTHWEST REGION

CATEGORY	UNITS	PRICE	QUANTITY	VALUE
PRODUCTION				
ALFALFA HAY	TON	36.700	5.000	183.50
TOTAL RECEIPTS				183.50
OPERATING INPUTS				
SULFUR	LBS.	.110	39.000	4.29
PHOSPHORUS	LBS.	.230	60.000	13.80
GYPHUM	LBS.	.000	150.000	0.00
CUST. INS. CONT.	ACRE	2.000	1.000	2.00
CUST. HERBICIDE	ACRE	2.200	1.000	2.20
ALFALFA ESTAB.	ACRE	11.500	1.000	11.50
CUST STACK MOV.	TON	6.500	5.000	32.50
TRACTOR FUEL COST	ACRE			0.67
TRACT REPAIR COST	ACRE			0.15
TRACTOR LUBE COST	ACRE			1.43
EQUIP REPAIR COST	ACRE			4.89
IRRIG FUEL COST	ACRE			2.01
IRRIG REPAIR COST	ACRE			1.12
TOTAL OPERATING COST				65.64
RETURNS TO LAND, LABOR, CAPITAL, MACHINERY, WATER, OVERHEAD, RISK, AND MANAGEMENT				87.86
CAPITAL COST				
ANNUAL OPERATING CAPITAL		.040	37.500	1.50
TRACTOR INVESTMENT		.040	24.000	0.96
EQUIPMENT INVESTMENT		.040	63.333	2.53
IRRIGATION SYSTEM INVESTMENT		.040	60.250	2.41
TOTAL INTEREST CHARGE				21.56
RETURNS TO LAND, LABOR, MACHINERY, WATER, OVERHEAD, RISK AND MANAGEMENT				66.20
OWNERSHIP COST (DEPRECIATION, TAXES, INSURANCE)				
TRACTOR	DOL.			0.87
EQUIPMENT	DOL.			12.51
IRRIGATION SYSTEM	DOL.			9.26
TOTAL OWNERSHIP COST				22.64
RETURNS TO LAND, LABOR, OVERHEAD, WATER, RISK AND MANAGEMENT				43.56
LABOR COST				
MACHINERY LABOR	HR.	7.000	4.000	28.00
IRRIGATION LABOR	HR.	3.000	4.000	12.00
TOTAL LABOR COST				40.00
RETURNS TO LAND, OVERHEAD, WATER, RISK AND MANAGEMENT				3.56

SOURCE: NATURAL RESOURCE ECONOMICS DIVISION, FRO. SDA, CORVALLIS, OREGON
 MACHINERY OPERATIONS BASED ON DATA DEVELOPED BY THE FRO. CONSERVATION SERVICE

BUDGET IDENTIFICATION NUMBER --- 81-04-0000-15140
 ANNUAL CAPITAL MONTH --- 5

Table 9B

IRRIGATED ALFALFA HAY: PRODUCTION COSTS AND RETURNS
 LAND RESOURCE AREA 002 OREGON
 COORDINATED COMPREHENSIVE JOINT PLAN, PACIFIC NORTHWEST REGION

CATEGORY	UNIT	QUANTITY	PRICE	VALUE
			DOLLARS	DOLLARS
PREHARVEST COSTS				
MACHINERY LABOR	HOUR	.867	3.000	2.600
IRRIGATION LABOR	HOUR	4.674	3.000	14.022
SULFUR	LBS.	39.000	.110	4.290
PHOSPHORUS	LBS.	60.000	.230	13.800
GYPSON	LBS.	150.000	.030	4.500
CUST. INS. CONT.	ACRE	1.000	2.000	2.000
CUST. HERBICIDE	ACRE	1.000	2.200	2.200
ALFALFA ESTAB.	ACRE	1.000	11.600	11.600
TRACTOR FUEL LUBE AND REPAIRS	ACRE	1.000	3.624	3.624
EQUIPMENT FUEL LUBE AND REPAIRS	ACRE	1.000	.200	.200
IRRIGATION FUEL LUBE AND REPAIRS	ACRE	1.000	2.926	2.926
INTEREST ON OPERATING CAPITAL		12.719	.080	1.018
TOTAL PREHARVEST COSTS	ACRE	---	---	62.679
HARVEST COSTS				
MACHINERY LABOR	HOUR	5.190	3.000	15.571
CUST STACK MOV.	TON	5.000	6.500	32.500
TRACTOR FUEL LUBE AND REPAIRS	ACRE	1.000	13.749	13.749
EQUIPMENT FUEL LUBE AND REPAIRS	ACRE	1.000	4.353	4.353
TOTAL HARVEST COSTS				
PER HARVESTED ACRE (100)	ACRE	---	---	66.173
TOTAL HARVEST COSTS				
PER PLANTED ACRE	ACRE	---	---	66.173
TOTAL VARIABLE COST PER PLANTED ACRE	ACRE			129.852

YIELD PER HARVESTED ACRE 5.000 TON

YIELD PER PLANTED ACRE 5.000 TON

SOURCE: NATURAL RESOURCE ECONOMICS DIVISION, ERS, USDA, CORVALLIS, OREGON
 MACHINERY OPERATIONS BASED ON DATA DEVELOPED BY THE SOIL CONSERVATION SERVICE

Table 9C

QUOTA 1 IDENTIFICATION NUMBER 84 290000 19100

ANNUAL AVAILABLE QUOTA 1

TOTAL 6 00000 99999 9

IRRIGATED ALFALFA HAY PRODUCTION COSTS AND RETURNS
 (AND RE SOURCE AREA 002 ON 100)
 COORDINATED COMPREHENSIVE JOINT PLAN, PACIFIC REGION 11-1-1960

LINE PRODUCT 1 ALFALFA HAY	MONTHS IN UNITS												TOTAL UNIT COST COSTS	TOTAL UNIT RETURN COSTS
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	PERCENT OF TOTAL COST	PERCENT OF TOTAL COST
OPERATING INPUTS														
11 SULFUR	0	0	20.00	0	19.00	0	0	0	0	0	0	0	11.00	12.00
12 PHOSPHORUS	0	0	50.00	0	50.00	0	0	0	0	0	0	0	2.00	2.00
13 GYPSUM	0	0	150.00	0	0	0	0	0	0	0	0	0	0.00	0.00
14 COST, INS. CONT.	0	0	0	0	0	1.00	0	0	0	0	0	0	0.00	0.00
15 COST, HERBICIDE	0	0	0	0	0	1.00	0	0	0	0	0	0	0.00	0.00
16 ALFALFA ESTAB.	1.00	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
17 COST STACK MOV.	0	0	0	0	2.00	0	2.00	1.00	0	0	0	0	0.00	0.00
MACHINERY REQUIREMENTS														
18 HAY FERT SPREAD	0	0	1.00	0	1.00	0	0	0	0	0	0	0	0.00	0.00
19 STICKLE MOVER	0	0	0	0	1.00	0	1.00	1.00	0	0	0	0	0.00	0.00
20 RAKE	0	0	0	0	2.00	0	1.00	1.00	0	0	0	0	0.00	0.00
21 PTO WALKER	0	0	0	0	1.00	0	1.00	1.00	0	0	0	0	0.00	0.00
22 ACID IRRIG WATER	0	0	0	0	0	9.00	18.00	11.00	0	0	0	0	0.00	0.00

SOURCE: NATURAL RESOURCE ECONOMICS DIVISION, FRS, USDA, CORVALLIS, OREGON
 MACHINERY OPERATIONS BASED ON DATA DEVELOPED BY THE SOIL CONSERVATION SERVICE

Table 10A

IRRIGATED CLOVER GRASS HAY: PRODUCTION COSTS AND RETURNS
 LAND RESOURCE AREA 002 OREGON
 COORDINATED COMPREHENSIVE JOINT PLAN, PACIFIC NORTHWEST REGION

CATEGORY	UNITS	PRICE	QUANTITY	VALUE

PRODUCTION				
CLOVER-TIMOTHY	TON	20.000	6.000	120.00
TOTAL RECEIPTS				120.00

OPERATING INPUTS				
NITROGEN	LBS.	.280	50.000	14.00
PHOSPHORUS	LBS.	.230	80.000	18.40
CUST STACK MOV.	TON	6.500	1.000	6.50
TRACTOR FUEL COST	ACRE			4.73
TRACT REPAIR COST	ACRE			2.72
TRACTOR LUBE COST	ACRE			.71
EQUIP REPAIR COST	ACRE			4.55
IRRIG FUEL COST	ACRE			2.11
IRRIG REPAIR COST	ACRE			.35
TOTAL OPERATING COST				54.09

RETURNS TO LAND, LABOR, CAPITAL, MACHINERY, WATER, OVERHEAD, RISK, AND MANAGEMENT				65.91

CAPITAL COST				
ANNUAL OPERATING CAPITAL		.080	23.647	1.89
TRACTOR INVESTMENT		.080	41.827	3.35
EQUIPMENT INVESTMENT		.080	58.893	4.71
IRRIGATION SYSTEM INVESTMENT		.080	76.000	6.08
TOTAL INTEREST CHARGE				16.03

RETURNS TO LAND, LABOR, MACHINERY, WATER, OVERHEAD, RISK AND MANAGEMENT				49.89

OWNERSHIP COST (DEPRECIATION, TAXES, INSURANCE)				
TRACTOR	DOL.			5.18
EQUIPMENT	DOL.			10.51
IRRIGATION SYSTEM	DOL.			6.78
TOTAL OWNERSHIP COST				22.48

RETURNS TO LAND, LABOR, OVERHEAD, WATER, RISK AND MANAGEMENT				27.41

LABOR COST				
MACHINERY LABOR	HR.	3.000	6.057	18.17
IRRIGATION LABOR	HR.	3.000	3.936	11.81
TOTAL LABOR COST				29.98

RETURNS TO LAND, OVERHEAD, WATER, RISK AND MANAGEMENT				-2.57

SOURCE: NATURAL RESOURCE ECONOMICS DIVISION, ERS, USOA, CORVALLIS, OREGON
 MACHINERY OPERATIONS BASED ON DATA DEVELOPED BY THE SOIL CONSERVATION SERVICE

BUDGET IDENTIFICATION NUMBER --- 50 230000 15162
 ANNUAL CAPITAL MONTH 5

Table 10B

IRRIGATED CLOVER GRASS HAY: PRODUCTION COSTS AND RETURNS
 LAND RESOURCE AREA 002 OREGON
 COORDINATED COMPREHENSIVE JOINT PLAN, PACIFIC NORTHWEST REGION

CATEGORY	UNIT	QUANTITY	PRICE	VALUE
			DOLLARS	DOLLARS
PREHARVEST COSTS				
MACHINERY LABOR	HOURL	.867	3.000	2.600
IRRIGATION LABOR	HOURL	3.936	3.000	11.808
NITROGEN	LBS.	50.000	.280	14.000
PHOSPHORUS	LBS.	80.000	.230	18.400
TRACTOR FUEL LUBE AND REPAIRS	ACRE	1.000	1.169	1.169
EQUIPMENT FUEL LUBE AND REPAIRS	ACRE	1.000	.200	.200
IRRIGATION FUEL LUBE AND REPAIRS	ACRE	1.000	2.464	2.464
INTEREST ON OPERATING CAPITAL		15.880	.080	1.270
TOTAL PREHARVEST COSTS	ACRE	---	---	51.911
HARVEST COSTS				
MACHINERY LABOR	HOURL	5.190	3.000	15.571
CUST STACK MOV.	TON	1.000	6.500	6.500
TRACTOR FUEL LUBE AND REPAIRS	ACRE	1.000	6.999	6.999
EQUIPMENT FUEL LUBE AND REPAIRS	ACRE	1.000	4.353	4.353
TOTAL HARVEST COSTS				
PER HARVESTED ACRE (100)	ACRE	---	---	33.423
TOTAL HARVEST COSTS				
PER PLANTED ACRE	ACRE	---	---	33.423
TOTAL VARIABLE COST PER PLANTED ACRE	ACRE			85.334
YIELD PER HARVESTED ACRE		6.000	TON	
YIELD PER PLANTED ACRE		6.000	TON	

SOURCE: NATURAL RESOURCE ECONOMICS DIVISION, ERS, USDA, CORVALLIS, OREGON
 MACHINERY OPERATIONS BASED ON DATA DEVELOPED BY THE SOIL CONSERVATION SERVICE

Table 10C

BUDGET IDENTIFICATION NUMBER				50 250000 15162				ANNUAL CAPITAL MONTH				5				BUDGET RECORD NUMBER				0			
IRRIGATED CLOVER GRASS HAY1 PRODUCTION COSTS AND RETURNS LAND RESOURCE AREA 002 OREGON COORDINATED COMPREHENSIVE JOINT PLAN, PACIFIC NORTHWEST REGION																							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18						
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	PRICE	WEIGHT	UNIT	ITEM	TYPE	CONT						
PRODUCTION																							
1	CLOVER-TIMOTHY	0	0	0	2.00	0	2.00	2.00	0	0	0	0	20.000	0	3	50	2	3					
OPERATING INPUTS																							
RATE/UNIT																							
11	CLOVER-GRASS HAY	0	0	0	0	0	0	0	0	0	0	0	14.500	0	7	310	3	0					
12	NITROGEN	0	0	0	30.00	0	20.00	0	0	0	0	0	.280	0	12	212	3	0					
13	PHOSPHORUS	0	0	0	50.00	0	30.00	0	0	0	0	0	.230	0	12	213	3	0					
14	CUST STACK MOV.	1.00	0	0	0	0	0	0	0	0	0	0	6.500	0	3	390	3	9					
MACHINERY REQUIREMENTS																							
TIMES OVER																							
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SOURCE: NATURAL RESOURCE ECONOMICS DIVISION, FRS, USDA, CORVALLIS, OREGON
MACHINERY OPERATIONS BASED ON DATA DEVELOPED BY THE SOIL CONSERVATION SERVICE

Table 11A

IRRIGATED SWEET CORN FOR PROCESSING: PRODUCTION COSTS AND RETURNS
 LAND RESOURCE AREA 002 OREGON
 COORDINATED COMPREHENSIVE JOINT PLAN, PACIFIC NORTHWEST REGION

CATEGORY	UNITS	PRICE	QUANTITY	VALUE
PRODUCTION				
SWEET CORN	TON	40.000	8,000	320.00
TOTAL RECEIPTS				320.00
OPERATING INPUTS				
PLAN	LBS.	2.810	1,000	2.81
SWEET CORN SEED	LBS.	.800	9,000	7.20
FW. CORN PICK +	TON	10.000	3,000	30.00
CORN STALK TOPPS	ACRE	4.000	1,000	4.00
NITROGEN	LBS.	.280	150,000	42.00
PHOSPHORUS	LBS.	.230	120,000	27.60
POTASSIUM	LBS.	.150	60,000	9.00
TRACTOR FUEL COST	ACRE			7.01
TRACT REPAIR COST	ACRE			4.51
TRACTOR LUBE COST	ACRE			1.05
EQUIP REPAIR COST	ACRE			3.65
IRRIG FUEL COST	ACRE			1.88
IRRIG REPAIR COST	ACRE			.73
TOTAL OPERATING COST				104.04
RETURNS TO LAND, LABOR, CAPITAL, MACHINERY, WATER, OVERHEAD, RISK, AND MANAGEMENT				125.66
CAPITAL COST				
ANNUAL OPERATING CAPITAL		.010	37,736	3.77
TRACTOR INVESTMENT		.080	60,715	4.86
EQUIPMENT INVESTMENT		.080	47,723	3.82
IRRIGATION SYSTEM INVESTMENT		.080	71,250	5.70
TOTAL INTEREST CHARGE				17.35
RETURNS TO LAND, LABOR, MACHINERY, WATER, OVERHEAD, RISK AND MANAGEMENT				108.27
OWNERSHIP COST (DEPRECIATION, TAXES, INSURANCE)				
TRACTOR	DOL.			7.14
EQUIPMENT	DOL.			7.14
IRRIGATION SYSTEM	DOL.			6.34
TOTAL OWNERSHIP COST				20.62
RETURNS TO LAND, LABOR, OVERHEAD, WATER, RISK AND MANAGEMENT				87.65
LABOR COST				
MACHINERY LABOR	HR.	3.000	3,740	11.22
IRRIGATION LABOR	HR.	3.000	3,690	11.07
TOTAL LABOR COST				22.29
RETURNS TO LAND, OVERHEAD, WATER, RISK AND MANAGEMENT				65.36

SOURCE: NATURAL RESOURCE ECONOMICS DIVISION, ERS, USDA, ORTALLUT, OREGON
 MACHINERY OPERATIONS BASED ON DATA DEVELOPED BY THE SOIL CONSERVATION SERVICE

BUDGET IDENTIFICATION NUMBER --- 86 000000 0000
 ANNUAL CAPITAL MONTH 0

Table 11B

IRRIGATED SWEET CORN FOR PROCESSING: PRODUCTION COSTS AND RETURNS
 LAND RESOURCE AREA 002 OREGON
 COORDINATED COMPREHENSIVE JOINT PLAN, PACIFIC NORTHWEST REGION

CATEGORY	UNIT	QUANTITY	PRICE	VALUE
			DOLLARS	DOLLARS
PREHARVEST COSTS				
MACHINERY LABOR	HOUR	3.762	3.000	11.285
IRRIGATION LABOR	HOUR	3.690	3.000	11.070
2-4-0	LBS.	1.000	2.910	2.910
SWEET CORN SEED	LBS.	9.000	.900	7.200
CORN STALK TOPPI	ACRE	1.000	4.900	4.900
NITROGEN	LBS.	150.000	.280	42.000
PHOSPHORUS	LBS.	120.000	.230	27.600
POTASSIUM	LBS.	60.000	.150	9.000
TRACTOR FUEL LUBE AND REPAIRS	ACRE	1.000	12.569	12.569
EQUIPMENT FUEL LUBE AND REPAIRS	ACRE	1.000	3.653	3.653
IRRIGATION FUEL LUBE AND REPAIRS	ACRE	1.000	2.310	2.310
INTEREST ON OPERATING CAPITAL		37.706	.090	3.016

TOTAL PREHARVEST COSTS	ACRE	---	---	137.314

HARVEST COSTS				
SW. CORN PICK +	TON	9.000	10.300	92.400

TOTAL HARVEST COSTS				
PER HARVESTED ACRE (100)	ACRE	---	---	92.400

TOTAL HARVEST COSTS				
PER PLANTED ACRE	ACRE	---	---	92.400

TOTAL VARIABLE COST PER PLANTED ACRE	ACRE			219.714

YIELD PER HARVESTED ACRE		9.000 TON		
YIELD PER PLANTED ACRE		9.000 TON		

SOURCE: NATURAL RESOURCE ECONOMICS DIVISION, ERS, USDA, CORVALLIS, OREGON
 MACHINERY OPERATIONS BASED ON DATA DEVELOPED BY THE SOIL CONSERVATION SERVICE

Table 11C

UNITED IDENTIFICATION NUMBER 46 220000 15164

ANNUAL TOTAL POUNDS 1

UNIT 1 - CORN 4000000 1

IRRIGATED SOFT CORN FOR PRODUCTION, PRODUCTION COSTS AND YIELDS,
LAND RESOURCE AREA 002 DRYLAND
COORDINATE COMPREHENSIVE JOINT PLAN, PRACTICE, MODIFICATION, REGION

UNIT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL
PRODUCTION																			
1 SOFT CORN	0	0	0	0	0	0	0	0	4.00	0	0	0	40.000	0	0	0	0	0	0
UNIT																			
INPUTS																			
11 2-4-0	0	0	0	0	1.00	0	0	0	0	0	0	0	2.400	0	0	0	0	0	0
12 SOFT CORN SEED	0	0	0	0	0	0	0	0	0	0	0	0	2.400	0	0	0	0	0	0
13 SOFT CORN PICK 4	0	0	0	0	0	0	0	0	4.00	0	0	0	10.400	0	0	0	0	0	0
14 CORN STALK TOPPI	0	0	0	0	0	0	0	1.00	0	0	0	0	4.400	0	0	0	0	0	0
15 NITROGEN	0	0	0	0	0.150.00	0	0	0	0	0	0	0	2.400	0	0	0	0	0	0
16 PHOSPHORUS	0	0	0	0	0.120.00	0	0	0	0	0	0	0	2.400	0	0	0	0	0	0
17 POTASSIUM	0	0	0	0	0.50.00	0	0	0	0	0	0	0	2.400	0	0	0	0	0	0
MACHINERY REQUIREMENTS																			
18 MR PLON 4-16	0	0	0	0	1.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 YANHEM DISK	0	0	0	0	3.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20 CULTIPACKER	0	0	0	0	3.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21 PLANTER	0	0	0	0	1.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 ROW CULTIVATOR	0	0	0	0	0	2.00	0	0	0	0	0	0	0	0	0	0	0	0	0
23 TANDEM DISK	0	0	0	0	0	0	0	0	0	0	0	0	1.00	0	0	0	0	0	0
24 SPIKE HARROW	0	0	0	0	3.00	3.00	0	0	0	0	0	0	0	0	0	0	0	0	0
25 AGRI INPUTS WATER	0	0	0	0	0	6.00	12.00	12.00	0	0	0	0	0	0	0	0	0	0	0

SOURCE: NATURAL RESOURCE ECONOMICS DIVISION, ERS, USDA, CAPVALLEY, DRYLAND
MACHINERY OPERATIONS BASED ON DATA DEVELOPED BY THE SOIL CONSERVATION SERVICE

Table 12A

NON-IRRIGATED BARLEY: PRODUCTION COSTS AND RETURNS
 LAND RESOURCE AREA 032 OREGON
 COORDINATED COMPREHENSIVE JOINT PLAN, PACIFIC NORTHWEST REGION

CATEGORY	UNITS	PRICE	QUANTITY	VALUE
PRODUCTION				
BARLEY	BU.	1.580	45.800	72.36
TOTAL RECEIPTS				72.36
OPERATING INPUTS				
NITROGEN	LBS.	.280	27.000	7.56
PHOSPHORUS	LBS.	.230	40.000	9.20
POTASSIUM	LBS.	.150	31.000	4.65
LIME	LBS.	.012	81.000	.97
BARLEY SEED	LBS.	.080	75.000	6.00
2-4-D	LBS.	2.810	1.000	2.81
CUSTOM HAULING	BU.	.100	45.800	4.58
CUST. HERBICIDE	ACRE	2.200	1.000	2.20
TRACTOR FUEL COST	ACRE			3.41
TRACT REPAIR COST	ACRE			1.76
TRACTOR LUBE COST	ACRE			.51
EQUIP FUEL COST	ACRE			1.74
EQUIP LUBE COST	ACRE			.26
EQUIP REPAIR COST	ACRE			3.37
TOTAL OPERATING COST				49.52
RETURNS TO LAND, LABOR, CAPITAL, MACHINERY, OVERHEAD, RISK, AND MANAGEMENT				22.84
CAPITAL COST				
ANNUAL OPERATING CAPITAL		.080	14.473	1.16
TRACTOR INVESTMENT		.030	27.042	2.16
EQUIPMENT INVESTMENT		.030	47.349	3.79
TOTAL INTEREST CHARGE				7.11
RETURNS TO LAND, LABOR, MACHINERY, OVERHEAD, RISK AND MANAGEMENT				15.73
OWNERSHIP COST (DEPRECIATION, TAXES, INSURANCE)				
TRACTOR	DOL.			3.36
EQUIPMENT	DOL.			7.32
TOTAL OWNERSHIP COST				10.73
RETURNS TO LAND, LABOR, OVERHEAD, RISK AND MANAGEMENT				5.00
LABOR COST				
MACHINERY LABOR	HP.	3.000	2.314	6.94
TOTAL LABOR COST				6.94
RETURNS TO LAND, OVERHEAD, RISK AND MANAGEMENT				-1.94

SOURCE: NATURAL RESOURCE ECONOMICS DIVISION, ERS, USDA, CORVALLIS, OREGON
 MACHINERY OPERATIONS BASED ON DATA DEVELOPED BY THE SOIL CONSERVATION SERVICE

BUDGET IDENTIFICATION NUMBER --- 71 000000 10165

ANNUAL CAPITAL MONTH 3

Table 12B

NON-IRRIGATED BARLEY: PRODUCTION COSTS AND RETURNS
 LAND RESOURCE AREA 002 OREGON
 COORDINATED COMPREHENSIVE JOINT PLAN, PACIFIC NORTHWEST REGION

CATEGORY	UNIT	QUANTITY	PRICE	VALUE
			DOLLARS	DOLLARS
PREHARVEST COSTS				
MACHINERY LABOR	HOOR	1.904	3.000	5.712
NITROGEN	LBS.	27.000	.230	7.560
PHOSPHORUS	LBS.	40.000	.230	9.200
POTASSIUM	LBS.	31.000	.150	4.650
LIME	LBS.	31.000	.012	.972
BARLEY SEED	LBS.	75.000	.380	6.000
2-4-D	LBS.	1.000	2.410	2.410
CUST. HERBICIDE	ACRE	1.000	2.200	2.200
TRACTOR FUEL LUBE AND REPAIRS	ACRE	1.000	5.677	5.677
EQUIPMENT FUEL LUBE AND REPAIRS	ACRE	1.000	2.429	2.429
INTEREST ON OPERATING CAPITAL		14.473	.080	1.158
TOTAL PREHARVEST COSTS	ACRE	---	---	43.357
HARVEST COSTS				
MACHINERY LABOR	HOOR	.376	3.000	1.129
CUSTOM HAULING	BU.	45.800	.100	4.580
EQUIPMENT FUEL LUBE AND REPAIRS	ACRE	1.000	3.442	3.442
TOTAL HARVEST COSTS				
PER HARVESTED ACRE (100)	ACRE	---	---	9.151
TOTAL HARVEST COSTS				
PER PLANTED ACRE	ACRE	---	---	9.151
TOTAL VARIABLE COST PER PLANTED ACRE	ACRE			57.515
YIELD PER HARVESTED ACRE		45.800 BU.		
YIELD PER PLANTED ACRE		45.800 BU.		

SOURCE: NATURAL RESOURCE ECONOMICS DIVISION, ERS, USDA, CORVALLIS, OREGON
 MACHINERY OPERATIONS BASED ON DATA DEVELOPED BY THE SOIL CONSERVATION SERVICE

Table 12C

BUDGET IDENTIFICATION NUMBER 71 200000 10165										ANNUAL CAPITAL MONTH 9				BUDGET RECORD NUMBER 0			
NON-IRRIGATED BARLEY: PRODUCTION COSTS AND RETURNS																	
LAND RESOURCES AREA 002 OREGON																	
COORDINATED COMPREHENSIVE JOINT PLAN, PACIFIC NORTHWEST REGION																	
LIFE PRODUCTION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	PRICE	WEIGHT	UNIT	ITEM	TYPE
1 BARLEY	0	0	0	0	0	0	0	45.80	0	0	0	0	1.580	0	2	71	2
OPERATING INPUTS																	
RATE/UNIT																	
11 NITROGEN	0	0	0	27.00	0	0	0	0	0	0	0	0	0	0	12	212	3
12 PHOSPHORUS	0	0	0	40.00	0	0	0	0	0	0	0	0	0	0	12	213	3
13 POTASSIUM	0	0	0	31.00	0	0	0	0	0	0	0	0	0	0	12	215	3
14 LIME	0	0	0	41.00	0	0	0	0	0	0	0	0	0	0	12	220	3
15 BARLEY SEED	0	0	0	75.00	0	0	0	0	0	0	0	0	0	0	12	171	3
16 2-6-0	0	0	0	0	1.00	0	0	0	0	0	0	0	2.810	0	12	251	3
17 CUSTOM HAILING	0	0	0	0	0	0	0	45.80	0	0	0	0	0	0	2	302	3
18 CUST. FERTILIZER	0	0	0	0	1.00	0	0	0	0	0	0	0	2.200	0	7	374	3
MACHINERY REQUIREMENTS																	
TIMES OVER																	
XXXXX XXXXX POWER XXXXX UNIT CODE																	
38 43 PLOW 4-16	0	1.00	0	0	0	0	0	0	0	0	0	0	0	0	8	31	4
39 TANDEN DISK	0	1.00	1.00	0	0	0	0	0	0	0	0	0	0	0	8	77	4
40 SPIKE HARROW	0	1.00	0	0	0	0	0	0	0	0	0	0	0	0	8	45	4
41 SPRING TOWTH	0	1.00	1.00	0	0	0	0	0	0	0	0	0	0	0	8	78	4
43 DRILL W/FERT	0	0	0	1.00	0	0	0	0	0	0	0	0	0	0	8	65	4
44 50 COMBINE	0	0	0	0	0	0	0	1.00	0	0	0	0	0	0	0	18	4

SOURCE: NATIONAL RESOURCE ECONOMICS DIVISION, ERS, USDA, CORVALLIS, OREGON
MACHINERY OPERATIONS BASED ON DATA DEVELOPED BY THE SOIL CONSERVATION SERVICE

Table 13A

NON-IRRIGATED CLOVER GRASS HAY: PRODUCTION COSTS AND RETURNS
 LAND RESOURCE AREA 002 OREGON
 COORDINATED COMPREHENSIVE JOINT PLAN, PACIFIC NORTHWEST REGION

CATEGORY	UNITS	PRICE	QUANTITY	VALUE
PRODUCTION				
CLOVER-GRASS HAY	TON	35.000	2.500	87.50
TOTAL RECEIPTS				87.50
OPERATING INPUTS				
NITROGEN	LBS.	.290	40,000	11.60
PHOSPHORUS	LBS.	.270	20,000	5.40
CLOVER-GRASS HAY	ACRE	14.500	1.000	14.50
DUST STACK MOV.	TON	6.500	2.500	16.25
TRACTOR FUEL COST	ACRE			2.41
TRACTOR REPAIR COST	ACRE			1.76
TRACTOR LUBE COST	ACRE			.42
EQUIP REPAIR COST	ACRE			1.66
TOTAL OPERATING COST				53.21
RETURNS TO LAND, LABOR, CAPITAL, MACHINERY, OVERHEAD, RISK, AND MANAGEMENT				34.29
CAPITAL COST				
ANNUAL OPERATING CAPITAL		.030	7,955	.24
TRACTOR INVESTMENT		.030	21,514	.65
EQUIPMENT INVESTMENT		.030	25,650	.77
TOTAL INTEREST CHARGE				1.66
RETURNS TO LAND, LABOR, MACHINERY, OVERHEAD, RISK AND MANAGEMENT				29.63
OWNERSHIP COST (DEPRECIATION, TAXES, INSURANCE)				
TRACTOR	DOL.			2.93
EQUIPMENT	DOL.			4.43
TOTAL OWNERSHIP COST				7.36
RETURNS TO LAND, LABOR, OVERHEAD, RISK AND MANAGEMENT				22.27
LABOR COST				
MACHINERY LABOR	HR.	3.000	2,040	6.12
TOTAL LABOR COST				6.12
RETURNS TO LAND, OVERHEAD, RISK AND MANAGEMENT				16.15

SOURCE: NATURAL RESOURCE ECONOMISTS DIVISION, ERS, EOL, CORVALLIS, OREGON
 MACHINERY OPERATIONS BASED ON DATA DEVELOPED BY THE SOIL CONSERVATION SERVICE

BUDGET IDENTIFICATION NUMBER --- 93 200000 10153
 ANNUAL CAPITAL MONTH 4

Table 13B

NON-IRRIGATED CLOVER GRASS HAY: PRODUCTION COSTS AND RETURNS
 LAND RESOURCE AREA 002 OREGON
 COORDINATED COMPREHENSIVE JOINT PLAN, PACIFIC NORTHWEST REGION

CATEGORY	UNIT	QUANTITY	PRICE	VALUE
			DOLLARS	DOLLARS
PREHARVEST COSTS				
MACHINERY LABOR	HOUP	.433	3.000	1.300
NITROGEN	LBS.	40.000	.280	11.200
PHOSPHORUS	LBS.	20.000	.230	4.600
CLOVER-GRASS HAY	ACRE	1.000	14.500	14.500
TRACTOR FUEL LUBE AND REPAIRS	ACRE	1.000	.584	.584
EQUIPMENT FUEL LUBE AND REPAIRS	ACRE	1.000	.294	.294
INTEREST ON OPERATING CAPITAL		3.625	.380	.290
TOTAL PREHARVEST COSTS	ACRE	---	---	32.760
HARVEST COSTS				
MACHINERY LABOR	HOUP	1.607	3.000	4.821
CUST STACK MOV.	TON	2.500	6.500	16.250
TRACTOR FUEL LUBE AND REPAIRS	ACRE	1.000	4.417	4.417
EQUIPMENT FUEL LUBE AND REPAIRS	ACRE	1.000	1.370	1.370
TOTAL HARVEST COSTS				
PER HARVESTED ACRE(100)	ACRE	---	---	26.857
TOTAL HARVEST COSTS				
PER PLANTED ACRE	ACRE	---	---	26.857
TOTAL VARIABLE COST PER PLANTED ACRE	ACRE			59.625
YIELD PER HARVESTED ACRE		2.500 TON		
YIELD PER PLANTED ACRE		2.500 TON		

SOURCE: NATURAL RESOURCE ECONOMICS DIVISION, ERS, USDA, CORVALLIS, OREGON
 MACHINERY OPERATIONS BASED ON DATA DEVELOPED BY THE SOIL CONSERVATION SERVICE

NON-IRIGATING CLOVER GRASS MAY BE PRODUCED COPEL AND FERTILE
LAND BEYOND A 0.2 0.2600
COORDINATE COMPREHENSIVE JOURNALS, PASTIC HORTICULTURE

SOURCE: NATURAL RESOURCE ECONOMICS DIVISION, ERS, USDA, COWALL'S, 2014, FROM MACHINERY OPERATIONS BASED ON DATA DEVELOPED BY THE SOIL CONSERVATION SERVICE.

Table 14A

NON-IRRIGATED OATS: PRODUCTION COSTS AND RETURNS
 COORDINATED COMPREHENSIVE JOINT PLAN, PACIFIC NORTHWEST REGION
 LAND RESOURCE AREA 102 OREGON

CATEGORY	UNITS	PRICE	QUANTITY	VALUE
PRODUCTION				
OATS				
TOTAL RECEIPTS	BU.	.970	48.000	46.56
				46.56
OPERATING EXPENSES				
INTEREST				
FERTILIZER	LBS.	.280	73.000	20.44
ROTTING	LBS.	.050	10.000	0.50
SULFUR	LBS.	.170	30.000	5.10
OATS SEED	LBS.	.110	59.000	6.49
CUSTOM HAULING	LBS.	.090	60.000	5.40
TRACTOR FUEL COST	BU.	.100	48.000	4.80
TRACTOR REPAIR COST	ACRE			3.66
TRACTOR LUBE COST	ACRE			2.13
EQUIP FUEL COST	ACRE			.55
EQUIP LUBE COST	ACRE			1.74
EQUIP REPAIR COST	ACRE			.26
TOTAL OPERATING COST	ACRE			3.25
				3.12
RETURNS TO LAND, LABOR, CAPITAL, MACHINERY, OVERHEAD, RISK, AND MANAGEMENT				-6.56
CAPITAL COST				
ANNUAL OPERATING CAPITAL				
TRACTOR INVESTMENT		.090	16.064	1.29
EQUIPMENT INVESTMENT		.090	64.047	5.12
TOTAL INTEREST CHARGE		.050	46.708	3.74
				10.15
RETURNS TO LAND, LABOR, MACHINERY, OVERHEAD, RISK, AND MANAGEMENT				-16.71
OWNERSHIP COST (DEPRECIATION, TAXES, INSURANCE)				
TRACTOR	DOL.			7.50
EQUIPMENT	DOL.			7.28
TOTAL OWNERSHIP COST				14.78
RETURNS TO LAND, LABOR, OVERHEAD, RISK AND MANAGEMENT				-31.49
LABOR COST				
MACHINERY LABOR				
TOTAL LABOR COST	HR.	3.000	2.173	6.52
				6.52
RETURNS TO LAND, OVERHEAD, RISK AND MANAGEMENT				-38.01

SOURCE: NATURAL RESOURCE ECONOMICS DIVISION, FRS, USDA, CORVALLIS, OREGON
 MACHINERY OPERATIONS BASED ON DATA DEVELOPED BY THE SOIL CONSERVATION SERVICE
 PROJECT IDENTIFICATION NUMBER --- 74-000000-1000
 ANNUAL CROPAL ADJUST - 3

Table 14B

AGGREGATED DATA: PRODUCTION COSTS AND RETURNS
COORDINATED COMPREHENSIVE JOINT PLAN, PACIFIC NORTHWEST REGION
LAND RESOURCE AREA 002 OREGON

CATEGORY	UNIT	QUANTITY	PRICE	VALUE
			DOLLARS	DOLLARS
PREHARVEST COSTS				
MACHINERY LABOR	HOUR	1.762	3.000	5.287
NITROGEN	LBS.	38.000	.290	11.020
PHOSPHORUS	LBS.	40.000	.230	9.200
POTASSIUM	LBS.	30.000	.150	4.500
SULFUR	LBS.	29.000	.110	3.190
SEED	LBS.	60.000	.090	5.400
TRACTOR FUEL LUBE AND REPAIRS	ACRE	1.000	6.041	6.041
EQUIPMENT FUEL LUBE AND REPAIRS	ACRE	1.000	2.408	2.408
INTEREST ON OPERATING CAPITAL		16.064	.080	1.285
TOTAL PREHARVEST COSTS	ACRE	---	---	51.551
HARVEST COSTS				
MACHINERY LABOR	HOUR	.375	3.000	1.125
CUSTOM HAULING	BU.	43.000	.100	4.300
EQUIPMENT FUEL LUBE AND REPAIRS	ACRE	1.000	3.442	3.442
TOTAL HARVEST COSTS				
PER HARVESTED ACRE (100)	ACRE	---	---	9.771
TOTAL HARVEST COSTS				
PER PLANTED ACRE	ACRE	---	---	9.071
TOTAL VARIABLE COST PER PLANTED ACRE	ACRE			60.621
YIELD PER HARVESTED ACRE 43.000 BU.				
YIELD PER PLANTED ACRE 48.000 BU.				

EDWARD L. RICHARDSON, ECONOMIC DIVISION, FOR. AFF. DEPT., WASHINGTON
FIGURES BASED ON DATA DEVELOPED BY THE ECONOMIC DIVISION, FOR. AFF. DEPT.

Table 14C

BUDGET IDENTIFICATION NUMBER 74 20000 10159																			ANNUAL CAPITAL MONTH 8				BUDGET RECORD NUMBER 9														
NON-IRRIGATED OATS: PRODUCTION COSTS AND RETURNS COORDINATED COMPREHENSIVE JOINT PLAN, PACIFIC NORTHWEST REGION LAND RESOURCE AREA 002 ORCON																																					

SOURCE: NATURAL RESOURCE ECONOMICS DIVISION, ERS, USDA, CORVALLIS, OREGON
MACHINERY OPERATIONS BASED ON DATA DEVELOPED BY THE SOIL CONSERVATION SERVICE

Table 15A

NON-IRRIGATED WINTER WHEAT: PRODUCTION COSTS AND RETURNS
 LAND PRODUCTIVE AREA 102 ACRES
 COORDINATED COMPREHENSIVE JOINT PLAN, PACIFIC NORTH-WEST REGION

CATEGORY	UNIT	PRICE	QUANTITY	VALUE
PRODUCTION				
WINTER WHEAT	BU.	2.540	64,700	170.21
TOTAL RECEIPTS				170.21
OPERATING INPUTS				
NITROGEN	LBS.	.290	39,000	12.32
PHOSPHORUS	LBS.	.230	39,000	9.97
POTASSIUM	LBS.	.150	39,000	6.35
LIME	LBS.	.012	101,000	1.21
WHEAT SEED	BU.	.103	40,000	4.24
CUST. HERBICIDE	ACRE	2.200	.330	.73
CUSTOM HAULING	BU.	.100	64,700	6.47
CUST. INS. CONT.	ACRE	11.600	1.000	11.60
TRACTOR FUEL COST	ACRE			1.54
TRACTOR REPAIR COST	ACRE			.30
TRACTOR LUBE COST	ACRE			.23
EQUIP. FUEL COST	ACRE			1.74
EQUIP. LUBE COST	ACRE			.26
EQUIP. REPAIR COST	ACRE			1.74
TOTAL OPERATING COST				53.69
RETURNS TO LAND, LABOR, CAPITAL, MACHINERY, OVERHEAD, RISK, AND MANAGEMENT				116.52
CAPITAL COST				
ANNUAL OPERATING CAPITAL		.030	39,356	3.10
TRACTOR INVESTMENT		.030	12,225	.96
EQUIPMENT INVESTMENT		.040	33,257	2.86
TOTAL INTEREST CHARGE				6.92
RETURNS TO LAND, LABOR, MACHINERY, OVERHEAD, RISK AND MANAGEMENT				99.60
DEPRECIATION COST (DEPRECIATION, TAXES, INSURANCE)				
TRACTOR	DOL.			1.52
EQUIPMENT	DOL.			5.11
TOTAL DEPRECIATION COST				6.63
RETURNS TO LAND, LABOR, OVERHEAD, RISK AND MANAGEMENT				89.77
LABOR COST				
MACHINERY LABOR	HR.	3.000	1,271	3.91
TOTAL LABOR COST				3.91
RETURNS TO LAND, OVERHEAD, RISK AND MANAGEMENT				84.95

SOURCE: NATURAL RESOURCE ECONOMICS DIVISION, ERS, USDA, CORVALLIS, OREGON
 MACHINERY OPERATIONS BASED ON DATA DEVELOPED BY THE SOIL CONSERVATION SERVICE

BUDGET IDENTIFICATION NUMBER --- 74 000000 10153

ANNUAL CAPITAL MONTH 3

Table 15B

NON-IRRIGATED WINTER WHEAT: PRODUCTION COSTS AND RETURNS
 LAND RESOURCE AREA 102 OREGON
 COORDINATED COMPREHENSIVE JOINT PLAN, PACIFIC NORTHWEST REGION

CATEGORY	UNIT	QUANTITY	PRICE	VALUE
			DOLLARS	DOLLARS
PREHARVEST COSTS				
MACHINERY LABOR	HOOR	.261	3.000	2.532
NITROGEN	LBS.	69.000	.230	13.320
PHOSPHORUS	LBS.	39.000	.230	3.970
POTASSIUM	LBS.	39.000	.150	5.850
LIME	LBS.	101.000	.012	1.212
WHEAT SEED	BU.	90.000	.103	9.240
CHST. HERBICIDE	ACRE	.330	2.200	.726
CUTT. INS. CONT.	ACRE	1.000	11.600	11.600
TRACTOR FUEL LUBE AND REPAIRS	ACRE	1.000	2.566	2.566
EQUIPMENT FUEL LUBE AND REPAIRS	ACRE	1.000	.291	.291
INTEREST ON OPERATING CAPITAL		39.356	.080	3.139
TOTAL PREHARVEST COSTS	ACRE	---	---	64.546
HARVEST COSTS				
MACHINERY LABOR	HOOR	.376	3.000	1.129
CUSTOM HAULING	BU.	64.700	.100	6.470
EQUIPMENT FUEL LUBE AND REPAIRS	ACRE	1.000	3.442	3.442
TOTAL HARVEST COSTS				
PER HARVESTED ACRE (100)	ACRE	---	---	11.041
TOTAL HARVEST COSTS				
PER PLANTED ACRE	ACRE	---	---	11.041
TOTAL VARIABLE COST PER PLANTED ACRE	ACRE			75.797
YIELD PER HARVESTED ACRE 64,700 BU.				
YIELD PER PLANTED ACRE 64,700 BU.				

SOURCE: NATURAL RESOURCE ECONOMICS DIVISION, ERS, USDA, CORVALLIS, OREGON
 MACHINERY OPERATIONS BASED ON DATA DEVELOPED BY THE SOIL CONSERVATION SERVICE

[illegible]

SOURCE: NATURAL RESOURCE ECONOMICS DIVISION, ERS, USDA, CONSERVATION, OR SOI MACHINERY OPERATIONS BASED ON DATA DEVELOPED BY THE SOIL CONSERVATION SERVICE.

Table 16A

IRRIGATED BARLEY: PRODUCTION COSTS AND RETURNS
 LAND RESOURCE AREA 21C OREGON
 COORDINATED COMPREHENSIVE JOINT PLAN, PACIFIC NORTHWEST REGION

CATEGORY	UNITS	PRICE	QUANTITY	VALUE
PRODUCTION				
BARLEY	BU.	1.530	70.000	110.60
TOTAL RECEIPTS				110.60
OPERATING INPUTS				
NITROGEN	LBS.	.290	60.000	16.80
PHOSPHORUS	LBS.	.230	40.000	9.20
BARLEY SEED	LBS.	.090	100.000	9.00
2-4-D	LBS.	2.810	.750	2.11
CUST. HERBICIDE	ACRE	2.200	1.000	2.20
DITCH REPAIR	ACRE	1.600	1.000	1.60
CUSTOM COMBINE	ACRE	14.500	1.000	14.50
TRACTOR FUEL COST	ACRE			1.93
TRACT REPAIR COST	ACRE			1.11
TRACTOR LUBE COST	ACRE			.29
EQUIP REPAIR COST	ACRE			2.16
IRPIG FUEL COST	ACRE			2.24
IRPIG REPAIR COST	ACRE			.37
TOTAL OPERATING COST				62.52
RETURNS TO LAND, LABOR, CAPITAL, MACHINERY, WATER, OVERHEAD, RISK, AND MANAGEMENT				48.08
CAPITAL COST				
ANNUAL OPERATING CAPITAL		.090	33.547	3.08
TRACTOR INVESTMENT		.090	17.044	1.36
EQUIPMENT INVESTMENT		.090	27.406	2.19
IRRIGATION SYSTEM INVESTMENT		.080	90.750	6.46
TOTAL INTEREST CHARGE				13.10
RETURNS TO LAND, LABOR, MACHINERY, WATER, OVERHEAD, RISK AND MANAGEMENT				34.98
OWNERSHIP COST (DEPRECIATION, TAXES, INSURANCE)				
TRACTOR	DOL.			2.11
EQUIPMENT	DOL.			4.34
IRRIGATION SYSTEM	DOL.			7.21
TOTAL OWNERSHIP COST				13.66
RETURNS TO LAND, LABOR, OVERHEAD, WATER, RISK AND MANAGEMENT				21.33
LABOR COST				
MACHINERY LABOR	HR.	3.000	2.466	7.40
IRRIGATION LABOR	HR.	3.000	4.192	12.55
TOTAL LABOR COST				19.95
RETURNS TO LAND, OVERHEAD, WATER, RISK AND MANAGEMENT				1.33

SOURCE: NATURAL RESOURCE ECONOMICS DIVISION, ERS, USDA, CORVALLIS, OREGON
 MACHINERY OPERATIONS BASED ON DATA DEVELOPED BY THE SOIL CONSERVATION SERVICE

APPLICABLE TO LRA 21 AND 43
 BUDGET IDENTIFICATION NUMBER --- 711030000 15164
 ANNUAL CAPITAL MONTH 1

Table 16B

IRRIGATED RAPEL: PRODUCTION COSTS AND RETURNS
 LAND RESOURCE AREA 310 OREGON
 COORDINATED COMPREHENSIVE JOINT PLAN, PACIFIC NORTHWEST REGION

CATEGORY	UNIT	QUANTITY	PRICE	VALUE
			DOLLARS	DOLLARS
PREHARVEST COSTS				
MACHINERY LABOR	HOUP	2.462	3.000	7.384
IRRIGATION LABOR	HOUP	4.132	3.000	12.396
NITROGEN	LBS.	60.000	.280	16.800
PHOSPHORUS	LBS.	40.000	.230	9.200
RAPEL SEED	LBS.	100.000	.180	18.000
2-4-D	LBS.	.750	2.812	2.109
CUST. HERBICIDE	ACRE	1.000	2.200	2.200
DITCH REPAIR	ACRE	1.000	1.630	1.630
TRACTOR FUEL LUBE AND REPAIRS	ACRE	1.000	3.322	3.322
EQUIPMENT FUEL LUBE AND REPAIRS	ACRE	1.000	2.152	2.152
IRRIGATION FUEL LUBE AND REPAIRS	ACRE	1.000	2.612	2.612
INTEREST ON OPERATING CAPITAL		33.712	.080	2.697
TOTAL PREHARVEST COSTS	ACRE	---	---	70.664
HARVEST COSTS				
CUSTOM COMBINE	ACRE	1.000	14.500	14.500
TOTAL HARVEST COSTS				
PER HARVESTED ACRE (100)	ACRE	---	---	14.500
TOTAL HARVEST COSTS				
PER PLANTED ACRE	ACRE	---	---	14.500
TOTAL VARIABLE COST PER PLANTED ACRE	ACRE			25.164
YIELD PER HARVESTED ACRE 70.000 BU.				
YIELD PER PLANTED ACRE 70.000 BU.				

SOURCE: NATURAL RESOURCE ECONOMICS DIVISION, ERS, USDA, CORVALLIS, OREGON
 MACHINERY OPERATIONS BASED ON DATA DEVELOPED BY THE SOIL CONSERVATION SERVICE
 APPLICABLE TO LRA 21 AND 43

Table 17A

NON-IRRIGATED WINTER WHEAT: PRODUCTION COSTS AND RETURNS
 LAND RESOURCE AREA 110 OREGON
 COORDINATED COMPREHENSIVE JOINT PLAN, PACIFIC NORTHWEST REGION

CATEGORY	UNITS	PRICE	QUANTITY	VALUE
PRODUCTION				
WINTER WHEAT	BU.	2.640	35.000	92.40
TOTAL RECEIPTS				92.40
OPERATING INPUTS				
NITROGEN	LBS.	.280	30.000	8.40
WHEAT SEED	LBS.	.103	45.000	4.64
2-4-D	LBS.	2.810	.500	1.41
CUST. SPRAY	ACRE	2.600	1.000	2.60
TRACTOR FUEL COST	ACRE			2.79
TRACTOR REPAIR COST	ACRE			1.44
TRACTOR LUBE COST	ACRE			.42
EQUIP FUEL COST	ACRE			1.45
EQUIP LUBE COST	ACRE			.22
EQUIP REPAIR COST	ACRE			3.54
TOTAL OPERATING COST				26.99
RETURNS TO LAND, LABOR, CAPITAL, MACHINERY, OVERHEAD, RISK, AND MANAGEMENT				65.41
CAPITAL COST				
ANNUAL OPERATING CAPITAL		.090	12.612	1.01
TRACTOR INVESTMENT		.090	22.130	1.99
EQUIPMENT INVESTMENT		.090	42.928	3.86
TOTAL INTEREST CHARGE				6.86
RETURNS TO LAND, LABOR, MACHINERY, OVERHEAD, RISK AND MANAGEMENT				59.21
OWNERSHIP COST (DEPRECIATION, TAXES, INSURANCE)				
TRACTOR	DOL.			2.75
EQUIPMENT	DOL.			5.71
TOTAL OWNERSHIP COST				8.46
RETURNS TO LAND, LABOR, OVERHEAD, RISK AND MANAGEMENT				49.75
LABOR COST				
MACHINERY LABOR	HR.	3.000	1.910	5.73
TOTAL LABOR COST				5.73
RETURNS TO LAND, OVERHEAD, RISK AND MANAGEMENT				44.02

SOURCE: NATURAL RESOURCE ECONOMICS DIVISION, ERS, USDA, CORVALLIS, OREGON
 MACHINERY OPERATIONS BASED ON DATA DEVELOPED BY THE SOIL CONSERVATION SERVICE
 APPLICABLE TO LRA 43
 BUDGET IDENTIFICATION NUMBER --- 741000000 1157
 ANNUAL CAPITAL MONTH ---

Table 17B

NON-IRRIGATED WINTER WHEAT: PRODUCTION COSTS AND RETURNS
 LAND RESOURCE AREA 010 OREGON
 COORDINATED COMPREHENSIVE JOINT PLAN, PACIFIC NORTHWEST REGION

CATEGORY	UNIT	QUANTITY	PRICE	VALUE
			DOLLARS	DOLLARS
PREHARVEST COSTS				
MACHINERY LABOR	HOOR	1.553	3.000	4.674
NITROGEN	LBS.	30.000	.230	6.900
WHEAT SEED	LBS.	45.000	.103	4.635
2-4-D	LBS.	.500	2.810	1.405
CUST. SPRAY	ACRE	1.000	2.600	2.600
TRACTOR FUEL LUBE AND REPAIRS	ACRE	1.000	4.645	4.645
EQUIPMENT FUEL LUBE AND REPAIRS	ACRE	1.000	2.764	2.764
INTEREST ON OPERATING CAPITAL		12.612	.390	4.939
TOTAL PREHARVEST COSTS	ACRE	---	---	29.733
HARVEST COSTS				
MACHINERY LABOR	HOOR	.322	3.000	.967
EQUIPMENT FUEL LUBE AND REPAIRS	ACRE	1.000	2.939	2.939
TOTAL HARVEST COSTS				
PER HARVESTED ACRE (100)	ACRE	---	---	3.907
TOTAL HARVEST COSTS				
PER PLANTED ACRE	ACRE	---	---	3.907
TOTAL VARIABLE COST PER PLANTED ACRE	ACRE			33.640
YIELD PER HARVESTED ACRE		35.000 BU.		
YIELD PER PLANTED ACRE		35.000 BU.		

SOURCE: NATURAL RESOURCE ECONOMICS DIVISION, ERS, USDA, CORVALLIS, OREGON
 MACHINERY OPERATIONS BASED ON DATA DEVELOPED BY THE SOIL CONSERVATION SERVICE
 APPLICABLE TO LRA 43

Table 17C

SUBJECT IDENTIFICATION NUMBER 761000000 10153

ANNUAL CAPITAL STOCK 0

EQUITY - CREDIT DEBIT 0

RUN-18 RIGATED WINTER MEATS PRODUCTION COSTS AND UTILITIES
 LAND OF SUBJECT AREA 010 025 600
 COORDINATED COMPREHENSIVE JOINT PLAN, CAPITAL REQUIREMENTS

LINE	MONTHS OF UTILITIES											
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1 WINTER MEAT	0	0	0	0	0	0	0	55.00	1	0	0	0
PRODUCTION												
1 WINTER MEAT	0	0	0	0	0	0	0	2.000	0	0	0	0
OPERATING INPUTS												
11 NITROGEN	0	0	0	50.00	0	0	0	0	0	0	0	0
12 WATER SFT	0	0	0	0	0	0	0	45.00	0	0	0	0
14 2-4-0	0	0	0	0	.50	0	0	0	0	0	0	0
16 CUST. SPRAY	0	0	0	0	1.00	0	0	0	0	0	0	0
MACHINE REQUIREMENTS												
38 M PLON 4-16	0	0	0	0	0	0	0	0	0	1.00	0	0
39 SPRINGROOTH	0	0	0	1.00	0	0	0	0	0	0	0	0
40 SOIL HARROW	0	0	0	0	1.00	0	0	0	0	0	0	0
41 ROLL WHEEL	0	0	0	0	0	1.00	0	1.00	0	0	0	0
42 ROLL WHEEL	0	0	0	0	0	0	0	1.00	0	0	0	0
44 DRY FERT SPREAD	0	0	0	1.00	0	0	0	0	0	0	0	0
46 SP COMBINE	0	0	0	0	0	0	0	1.00	0	0	0	0

SOURCE: NATURAL RESOURCE ECONOMIC DIVISION, ERS, USDA, GOVERNMENT, ORIGIN
 MACHINERY OPERATIONS BASED ON DATA DEVELOPED BY THE SOIL CONSERVATION SERVICE
 APPLICABLE TO 1984-85

Table 18A

IRRIGATED ALFALFA HAY: PRODUCTION COSTS AND RETURNS
 LAND RESOURCE AREA 021 OREGON
 COORDINATED COMPREHENSIVE JOINT PLAN, PACIFIC NORTHWEST REGION

CATEGORY	UNITS	PRICE	QUANTITY	VALUE
PRODUCTION				
ALFALFA HAY	TON	36.700	5.000	183.50
TOTAL RECEIPTS				183.50
OPERATING INPUTS				
CUST. FERT. APP.	ACRE	2.600	.500	1.30
CUST. SPRAY	ACRE	2.600	1.500	3.90
CUST STACK MOV.	TON	6.500	5.000	32.50
PHOSPHORUS	LBS.	.230	40.000	9.20
SULFUR	LBS.	.110	25.000	2.75
TRACTOR FUEL COST	ACRE			4.02
TRACT REPAIR COST	ACRE			2.60
TRACTOR LUBE COST	ACRE			.60
EQUIP FUEL COST	ACRE			.67
EQUIP LUBE COST	ACRE			.10
EQUIP REPAIR COST	ACRE			1.82
IRRIG FUEL COST	ACRE			2.38
IRRIG REPAIR COST	ACRE			.40
TOTAL OPERATING COST				62.35
RETURNS TO LAND, LABOR, CAPITAL, MACHINERY, WATER, OVERHEAD, RISK, AND MANAGEMENT				121.15
CAPITAL COST				
ANNUAL OPERATING CAPITAL		.080	32.535	2.60
TRACTOR INVESTMENT		.040	34.335	2.79
EQUIPMENT INVESTMENT		.030	54.936	4.40
IRRIGATION SYSTEM INVESTMENT		.040	85.500	6.84
TOTAL INTEREST CHARGE				16.63
RETURNS TO LAND, LABOR, MACHINERY, WATER, OVERHEAD, RISK AND MANAGEMENT				104.52
OWNERSHIP COST (DEPRECIATION, TAXES, INSURANCE)				
TRACTOR	DOL.			4.10
EQUIPMENT	DOL.			9.20
IRRIGATION SYSTEM	DOL.			7.63
TOTAL OWNERSHIP COST				20.93
RETURNS TO LAND, LABOR, OVERHEAD, WATER, RISK AND MANAGEMENT				83.59
LABOR COST				
MACHINERY LABOR	HR.	3.000	2.501	7.50
IRRIGATION LABOR	HR.	3.000	4.428	13.28
TOTAL LABOR COST				20.78
RETURNS TO LAND, OVERHEAD, WATER, RISK AND MANAGEMENT				62.80

SOURCE: NATURAL RESOURCE ECONOMICS DIVISION, ERS, USDA, CORVALLIS, OREGON
 MACHINERY OPERATIONS BASED ON DATA DEVELOPED BY THE SOIL CONSERVATION SERVICE

APPLICABLE TO LRA 10 AND 45
 BUDGET IDENTIFICATION NUMBER --- 312130000 1F1F6
 ANNUAL CAPITAL MONTH 6

Table 18B

IRRIGATED ALFALFA HAY: PRODUCTION COSTS AND RETURNS
 LAND RESOURCE AREA 021 OREGON
 COORDINATED COMPREHENSIVE JOINT PLAN, PACIFIC NORTH-WEST REGION

CATEGORY	UNIT	QUANTITY	PRICE	VALUE
			DOLLARS	DOLLARS
PREHARVEST COSTS				
IRRIGATION LABOR	HOUR	4,422	3.000	13,266
CUST. FERT. APP.	ACRE	1,500	2.600	3,900
CUST. SPRAY	ACRE	1,500	2.600	3,900
PHOSPHORUS	LBS.	40,000	.230	9,200
SULFUR	LBS.	25,000	.110	2,750
IRRIGATION FUEL LUBE AND REPAIRS	ACRE	1,000	2.772	2,772
INTEREST ON OPERATING CAPITAL		15,212	.500	7,606
TOTAL PREHARVEST COSTS	ACRE	---	---	34,594
HARVEST COSTS				
MACHINERY LABOR	HOUR	2,462	3.000	7,386
CUST STACK MOV.	TON	5,000	6.500	32,500
TRACTOR FUEL LUBE AND REPAIRS	ACRE	1,000	7.230	7,230
EQUIPMENT FUEL LUBE AND REPAIRS	ACRE	1,000	2.537	2,537
TOTAL HARVEST COSTS				
PER HARVESTED ACRE (100)	ACRE	---	---	49,753
TOTAL HARVEST COSTS				
PER PLANTED ACRE	ACRE	---	---	49,753
TOTAL VARIABLE COST PER PLANTED ACRE	ACRE			84,348
YIELD PER HARVESTED ACRE 8,000 TON				
YIELD PER PLANTED ACRE 8,000 TON				

SOURCE: NATURAL RESOURCE ECONOMICS DIVISION, ERS, USDA, CORVALLIS, OREGON
 MACHINERY OPERATIONS BASED ON DATA DEVELOPED BY THE SOIL CONSERVATION SERVICE
 APPLICABLE TO LRA 10 AND 43

Table 18C

BUDGET IDENTIFICATION NUMBER				812130000				15156				ANNUAL CAPITAL MONTH				6				BUDGET RECORD NUMBER				0			
IRRIGATED ALFALFA HAY PRODUCTION COSTS AND RETURNS																											
LAND RESOURCE AREA 001 OREGON																											
COORDINATED COMPREHENSIVE JOINT PLAN, PACIFIC NORTHWEST REGION																											
LINE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18									
PRODUCTION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	PRICE	WFLIGHT	UNIT	ITEM	TYPE	CONT									
1 ALFALFA HAY	0	0	0	0	0	2.50	0	2.50	0	0	0	0	36.700	0	3	81	2	0									
OPERATING INPUTS																											
RATE/UNIT																											
11 CUST. FEED. APP.	0	0	0	0	0	0	0	0	.50	0	0	0	2.600	0	7	361	3	0									
12 CUST. CORAY	0	0	0	0	0	0	1.50	0	0	0	0	0	2.600	0	7	373	3	0									
13 CUST STACK MOV.	0	0	0	0	0	2.50	0	2.50	0	0	0	0	6.500	6	3	490	3	3									
14 PHOSPHORUS	0	0	0	0	0	0	0	0	40.00	0	0	0	.250	0	12	213	3	0									
15 SULFUR	0	0	0	0	0	0	0	0	25.00	0	0	0	.110	0	12	210	3	0									
MACHINERY REQUIREMENTS																											
TIMES OVER																											
XXXXX																											
38 SP SWATHER	0	0	0	0	0	1.00	0	1.00	0	0	0	0	0	0	0	16	4	3									
39 RAKE	0	0	0	0	0	1.00	0	0	0	0	0	0	0	0	0	1	93	4									
40 PLO BALER	0	0	0	0	0	1.00	0	1.00	0	0	0	0	0	0	0	4	88	4									
49 ACIN IRRIG WATER	0	0	0	0	0	12.00	12.00	12.00	0	0	0	0	0	0	0	0	0	0									

SOURCE: NATURAL RESOURCE ECONOMICS DIVISION, ERS, USDA, CORVALLIS, OREGON
MACHINERY OPERATIONS BASED ON DATA DEVELOPED BY THE SOIL CONSERVATION SERVICE
APPLICABLE TO LRA 10 AND 43

Table 19A

IRRIGATED CATS: PRODUCTION COSTS AND RETURNS
 LAND RESOURCE AREA 021 OREGON
 COORDINATED COMPREHENSIVE JOINT PLAN, PACIFIC NORTHWEST REGION

CATEGORY	UNITS	PRICE	QUANTITY	VALUE
PRODUCTION				
CATS	BU.	.970	80,000	77.60
TOTAL RECEIPTS				77.60
OPERATING INPUTS				
NITROGEN	LBS.	.290	50,000	14.50
PHOSPHORUS	LBS.	.270	40,000	10.80
PAPLEF SEED	LBS.	.100	100,000	10.00
2-4-D	LBS.	2.910	.750	2.18
CUST. HERBICIDE	ACRE	2.200	1.000	2.20
DITCH REPAIR	ACRE	1.600	1.000	1.60
CUSTOM COMBINE	ACRE	14.500	1.000	14.50
TRACTOR FUEL COST	ACRE			1.93
TRACT REPAIR COST	ACRE			1.11
TRACTOR LUBE COST	ACRE			.20
EQUIP REPAIR COST	ACRE			2.15
IRRIG FUEL COST	ACRE			2.21
IRRIG REPAIR COST	ACRE			.37
TOTAL OPERATING COST				62.62
RETURNS TO LAND, LABOR, CAPITAL, MACHINERY, WATER, OVERHEAD, RISK, AND MANAGEMENT				15.20
CAPITAL COST				
ANNUAL OPERATING CAPITAL		.090	17,700	1.62
TRACTOR INVESTMENT		.090	17,044	1.36
EQUIPMENT INVESTMENT		.090	27,406	2.19
IRRIGATION SYSTEM INVESTMENT		.090	30,750	2.75
TOTAL INTEREST CHARGE				11.13
RETURNS TO LAND, LABOR, MACHINERY, WATER, OVERHEAD, RISK AND MANAGEMENT				3.65
OWNERSHIP COST (DEPRECIATION, TAXES, INSURANCE)				
TRACTOR	DOL.			2.11
EQUIPMENT	DOL.			2.34
IRRIGATION SYSTEM	DOL.			7.21
TOTAL OWNERSHIP COST				11.66
RETURNS TO LAND, LABOR, OVERHEAD, WATER, RISK AND MANAGEMENT				-10.21
LABOR COST				
MACHINERY LABOR	HR.	3.000	2,463	7.40
IRRIGATION LABOR	HR.	3.000	4,192	12.58
TOTAL LABOR COST				19.98
RETURNS TO LAND, OVERHEAD, WATER, RISK AND MANAGEMENT				-29.24

SOURCE: NATURAL RESOURCE ECONOMICS DIVISION, FRS, SOI, TRAVELLO, OREGON
 MACHINERY OPERATIONS BASED ON DATA DEVELOPED BY THE SOIL CONSERVATION SERVICE

BUDGET IDENTIFICATION NUMBER --- 74010000 1515
 ANNUAL CAPITAL MONTH 9

Table 19B

IRRIGATED OATS: PRODUCTION COSTS AND RETURNS
 LAND RESOURCE AREA 021 OREGON
 COORDINATED COMPREHENSIVE JOINT PLAN, PACIFIC NORTHWEST REGION

CATEGORY	UNIT	QUANTITY	PRICE	VALUE
			DOLLARS	DOLLARS
PREHARVEST COSTS				
MACHINERY LABOR	HOUR	2.468	3.000	7.404
IRRIGATION LABOR	HOUR	4.182	3.000	12.546
NITROGEN	LBS.	50.000	.280	13.900
PHOSPHORUS	LBS.	40.000	.230	9.200
BARLEY SEED	LBS.	100.000	.090	9.000
2-4-D	LBS.	.750	2.810	2.107
CUST. HERBICIDE	ACRE	1.000	2.200	2.200
DITCH REPAIR	ACRE	1.000	1.600	1.600
TRACTOR FUEL LUBE AND REPAIRS	ACRE	1.000	3.328	3.328
EQUIPMENT FUEL LUBE AND REPAIRS	ACRE	1.000	2.162	2.162
IRRIGATION FUEL LUBE AND REPAIRS	ACRE	1.000	2.618	2.618
INTEREST ON OPERATING CAPITAL		17.703	.080	1.417
TOTAL PREHARVEST COSTS	ACRE	---	---	69.333
HARVEST COSTS				
CUSTOM COMBINE	ACRE	1.000	14.500	14.500
TOTAL HARVEST COSTS				
PER HARVESTED ACRE (100)	ACRE	---	---	14.500
TOTAL HARVEST COSTS				
PER PLANTED ACRE	ACRE	---	---	14.500
TOTAL VARIABLE COST PER PLANTED ACRE	ACRE			83.833
YIELD PER HARVESTED ACRE		30.000 BU.		
YIELD PER PLANTED ACRE		30.000 BU.		

SOURCE: NATURAL RESOURCE ECONOMICS DIVISION, ERS, USDA, CORVALLIS, OREGON
 MACHINERY OPERATIONS BASED ON DATA DEVELOPED BY THE SOIL CONSERVATION SERVICE

Table 19C

UNITED STATES DEPARTMENT OF AGRICULTURE

ANNUAL SUMMARY

1964-65

IRRIGATED OATS PRODUCTION COSTS AND RETURNS
LAND AT SOURCE AREA 021 OKLAHOMA
COORDINATED COMPREHENSIVE JOINT PLAN, FISCAL YEAR NOVEMBER 1, 1964

TITLE	NUMBER OF UNITS												PRICE	TOTAL UNIT COST	TOTAL UNIT COST	TOTAL UNIT COST	TOTAL UNIT COST	TOTAL UNIT COST	TOTAL UNIT COST
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC							
PRODUCTION	0	0	0	0	0	0	0	0	40.00	0	0	0	0	0	0	0	0	0	0
1 OATS	0	0	0	0	0	0	0	0	40.00	0	0	0	0	0	0	0	0	0	0
OPERATING INPUTS																			
11 NITROGEN	0	0	0	60.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12 PHOSPHORUS	0	0	0	40.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 BARLEY SEED	0	0	0	100.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 2-4-D	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 GUST. HERBICIDE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 DITCH REPAIR	0	0	0	0	1.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 CUSTOM COMBINE	0	0	0	0	0	0	0	0	1.00	0	0	0	0	0	0	0	0	0	0
MACHINE REQUIREMENTS																			
28 M3 PLOW 3-16	0	0	0	0	0	0	0	0	1.00	0	0	0	0	0	0	0	0	0	0
39 OFFSET DISK	0	0	0	2.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40 SPIKE HARROW	0	0	0	3.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41 DRILL W/FEED	0	0	0	1.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49 AGIN LIFT, WATER	0	0	0	18.00	16.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0

SOURCE: NATURAL RESOURCE ECONOMICS DIVISION, ERS, USDA, GOVALLIS, OREGON
MACHINE OPERATIONS BASED ON DATA DEVELOPED BY THE SOIL CONSERVATION SERVICE

Table 20A

IRRIGATED POTATOES: PRODUCTION COSTS AND RETURNS
 LAND RESOURCE AREA 021 OREGON
 COORDINATED COMPREHENSIVE JOINT PLAN, PACIFIC NORTHWEST REGION

CATEGORY	UNITS	PRICE	QUANTITY	VALUE
PRODUCTION				
POTATOES	CWT.	2.500	350.000	875.00
TOTAL RECEIPTS				875.00
OPERATING INPUTS				
NITROGEN	LBS.	.280	225.000	63.00
CUST. FERT. APP.	ACRE	2.600	2.000	5.20
CUST. INS. CONT.	ACRE	11.600	2.000	23.20
DIGGING	CWT.	.250	350.000	87.50
SEED POTATOES	CWT.	2.800	18.000	50.40
SEED POT. TREAT.	CWT.	2.800	18.000	50.40
VINE REMOVAL	ACRE	7.200	1.000	7.20
CUSTOM HOE	ACRE	16.800	1.000	16.80
CUST. FERT. APP.	ACRE	2.600	1.000	2.60
TRACTOR FUEL COST	ACRE			4.39
TRACTOR REPAIR COST	ACRE			2.27
TRACTOR LUBE COST	ACRE			.66
EQUIP REPAIR COST	ACRE			3.07
IRRIG FUEL COST	ACRE			2.18
IRRIG REPAIR COST	ACRE			.36
TOTAL OPERATING COST				319.23
RETURNS TO LAND, LABOR, CAPITAL, MACHINERY, WATER, OVERHEAD, RISK, AND MANAGEMENT				555.77
CAPITAL COST				
ANNUAL OPERATING CAPITAL		.080	82.482	6.60
TRACTOR INVESTMENT		.080	34.856	2.79
EQUIPMENT INVESTMENT		.080	42.857	3.43
IRRIGATION SYSTEM INVESTMENT		.080	78.375	6.27
TOTAL INTEREST CHARGE				19.09
RETURNS TO LAND, LABOR, MACHINERY, WATER, OVERHEAD, RISK AND MANAGEMENT				535.68
OWNERSHIP COST (DEPRECIATION, TAXES, INSURANCE)				
TRACTOR	00L.			4.33
EQUIPMENT	00L.			6.78
IRRIGATION SYSTEM	00L.			7.00
TOTAL OWNERSHIP COST				18.11
RETURNS TO LAND, LABOR, OVERHEAD, WATER, RISK AND MANAGEMENT				518.58
LABOR COST				
MACHINERY LABOR	HR.	3.000	2.454	7.36
IRRIGATION LABOR	HR.	3.000	4.059	12.18
TOTAL LABOR COST				19.54
RETURNS TO LAND, OVERHEAD, WATER, RISK AND MANAGEMENT				499.04

SOURCE: NATURAL RESOURCE ECONOMICS DIVISION, ERS, USDA, CORVALLIS, OREGON
 MACHINERY OPERATIONS BASED ON DATA DEVELOPED BY THE SOIL CONSERVATION SERVICE
 APPLICABLE TO LRA 06
 BUDGET IDENTIFICATION NUMBER --- 662130000 15155
 ANNUAL CAPITAL MONTH 10

Table 20B

IRRIGATED POTATOES: PRODUCTION COSTS AND RETURNS
 LAND RESOURCE AREA 021 OREGON
 COORDINATED COMPREHENSIVE JOINT PLAN, PACIFIC NORTHWEST REGION

CATEGORY	UNIT	QUANTITY	PRICE	VALUE
			DOLLARS	DOLLARS
PREHARVEST COSTS				
MACHINERY LABOR	HOURL	2.454	3.000	7.362
IRRIGATION LABOR	HOURL	4.059	3.000	12.177
NITROGEN	LBS.	225.000	.280	63.000
CUST. FERT. APP.	ACRE	2.000	2.600	5.200
CUST. INS. CCNT.	ACRE	2.000	11.600	23.200
DIGGING	CWT.	350.000	.250	87.500
SEED POTATOES	CWT.	18.000	2.800	50.400
SEED POT. TREAT.	CWT.	18.000	2.800	50.400
CUSTOM HOE	ACRE	1.000	15.800	15.800
CUST. FERT. APP.	ACRE	1.000	2.600	2.600
TRACTOR FUEL LUBE AND REPAIRS	ACRE	1.000	7.317	7.317
EQUIPMENT FUEL LUBE AND REPAIRS	ACRE	1.000	3.072	3.072
IRRIGATION FUEL LUBE AND REPAIRS	ACRE	1.000	2.541	2.541
INTEREST ON OPERATING CAPITAL		51.882	.080	5.551
TOTAL PREHARVEST COSTS	ACRE	---	---	338.120
HARVEST COSTS				
VINE REMOVAL	ACRE	1.000	7.200	7.200
TOTAL HARVEST COSTS				
PER HARVESTED ACRE (100)	ACRE	---	---	7.200
TOTAL HARVEST COSTS				
PER PLANTED ACRE	ACRE	---	---	7.200
TOTAL VARIABLE COST PER PLANTED ACRE	ACRE			345.320

YIELD PER HARVESTED ACRE 350.000 CWT.

YIELD PER PLANTED ACRE 350.000 CWT.

SOURCE: NATURAL RESOURCE ECONOMICS DIVISION, ERS, USDA, CORVALLIS, OREGON
 MACHINERY OPERATIONS BASED ON DATA DEVELOPED BY THE SOIL CONSERVATION SERVICE
 APPLICABLE TO LRA 06

Table 21A

IRRIGATED WILD HAY: PRODUCTION COSTS AND RETURNS
 LAND RESOURCE AREA 021 OREGON
 COORDINATED COMPREHENSIVE JOINT PLAN, PACIFIC NORTHWEST REGION

CATEGORY	UNITS	PRICE	QUANTITY	VALUE
PRODUCTION				
WILD HAY	TON	18.500	2.000	37.00
BEEF	LBS.	.368	230.000	84.64
TOTAL RECEIPTS				121.64
OPERATING INPUTS				
NITROGEN	LBS.	.280	42.000	11.76
CUST STACK MCV.	TON	6.500	2.000	13.00
TRACTOR FUEL COST	ACRE			1.91
TRACTOR REPAIR COST	ACRE			1.02
TRACTOR LUBE COST	ACRE			.29
EQUIP FUEL COST	ACRE			.37
EQUIP LUBE COST	ACRE			.06
EQUIP REPAIR COST	ACRE			.92
IRRIG FUEL COST	ACRE			1.85
IRRIG REPAIR COST	ACRE			.71
TOTAL OPERATING COST				31.48
RETURNS TO LAND, LABOR, CAPITAL, MACHINERY, WATER, OVERHEAD, RISK, AND MANAGEMENT				90.16
CAPITAL COST				
ANNUAL OPERATING CAPITAL		.090	11.264	.90
TRACTOR INVESTMENT		.080	15.637	1.25
EQUIPMENT INVESTMENT		.090	26.702	2.14
IRRIGATION SYSTEM INVESTMENT		.090	66.500	5.32
TOTAL INTEREST CHARGE				9.51
RETURNS TO LAND, LABOR, MACHINERY, WATER, OVERHEAD, RISK AND MANAGEMENT				80.55
OWNERSHIP COST (DEPRECIATION, TAXES, INSURANCE)				
TRACTOR	00L.			1.94
EQUIPMENT	00L.			4.45
IRRIGATION SYSTEM	00L.			5.94
TOTAL OWNERSHIP COST				12.32
RETURNS TO LAND, LABOR, OVERHEAD, WATER, RISK AND MANAGEMENT				68.23
LABOR COST				
MACHINERY LABOR	HR.	3.000	1.748	5.24
IRRIGATION LABOR	HR.	3.000	3.444	10.33
TOTAL LABOR COST				15.58
RETURNS TO LAND, OVERHEAD, WATER, RISK AND MANAGEMENT				52.66

SOURCE: NATURAL RESOURCE ECONOMICS DIVISION, EPS, USDA, CORVALLIS, OREGON
 MACHINERY OPERATIONS BASED ON DATA DEVELOPED BY THE SOIL CONSERVATION SERVICE
 APPLICABLE TO LPA 16, 10, 23 AND 43
 BUDGET IDENTIFICATION NUMBER --- 532120000 15157

ANNUAL CAPITAL MONTH 7

Table 21B

IRRIGATED WILD HAY: PRODUCTION COSTS AND RETURNS
 LAND RESOURCE AREA 021 OREGON
 COORDINATED COMPREHENSIVE JOINT PLAN, PACIFIC NORTHWEST REGION

CATEGORY	UNIT	QUANTITY	PRICE	VALUE
			DOLLARS	DOLLARS
PREHARVEST COSTS				
MACHINERY LABOR	HOURL	.716	3.000	2.149
IRRIGATION LABOR	HOURL	3.444	3.000	10.332
NITROGEN	LBS.	42.000	.280	11.760
TRACTOR FUEL LUBE AND REPAIRS	ACRE	1.000	1.493	1.493
EQUIPMENT FUEL LUBE AND REPAIRS	ACRE	1.000	.120	.120
IRRIGATION FUEL LUBE AND REPAIRS	ACRE	1.000	2.156	2.156
INTEREST ON OPERATING CAPITAL		3.953	.080	.316
TOTAL PREHARVEST COSTS	ACRE	---	---	29.326
HARVEST COSTS				
MACHINERY LABOR	HOURL	1.015	3.000	3.044
CUST STACK MOV.	TON	2.000	6.500	13.000
TRACTOR FUEL LUBE AND REPAIRS	ACRE	1.000	1.726	1.726
EQUIPMENT FUEL LUBE AND REPAIRS	ACRE	1.000	1.225	1.225
TOTAL HARVEST COSTS				
PER HARVESTED ACRE(100)	ACRE	---	---	18.995
TOTAL HARVEST COSTS				
PER PLANTED ACRE	ACRE	---	---	18.995
TOTAL VARIABLE COST PER PLANTED ACRE	ACRE			47.321
		YIELD PER HARVESTED ACRE	2.000 TON	
		YIELD PER PLANTED ACRE	2.000 TON	

SOURCE: NATURAL RESOURCE ECONOMICS DIVISION, ERS, USDA, CORVALLIS, OREGON
 MACHINERY OPERATIONS BASED ON DATA DEVELOPED BY THE SOIL CONSERVATION SERVICE
 APPLICABLE TO LRA 06, 10, 23 AND 43

Table 21C

AGRICULTURAL INVESTMENT 1964-65 1965-66 1966-67

ANNUAL INVESTMENT 1964-65

TOTAL INVESTMENT 1964-65

ESTIMATED 1964-65 PRODUCTION COSTS AND RETURNS
 LAND RESOURCE AREA 0.21 OF TOTAL
 COORDINATE COORDINATE JOINT PLAN, PARTIAL, MONTHLY, 1964-65

1964-65 PRODUCTION 1. 1964-65 2. 1964-65	MONTHS OF YEAR											
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
OPERATING INPUTS	RATE/UNIT											
	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2
1.1 NITROGEN	0	0	0	42.00	0	0	0	0	0	0	0	0
1.2 COST STACK MOV.	0	0	0	0	0	0	1.00	1.00	0	0	0	0
MACHINERY REQUIREMENTS												
1.3 SOIL HARROW	0	0	0	0	1.00	0	0	0	0	0	0	0
1.4 SP. SHAFER	0	0	0	0	0	0	0.50	0.50	0	0	0	0
1.5 DRY FERT. SPREAD	0	0	0	0	1.00	0	0	0	0	0	0	0
1.6 PTO GALLER	0	0	0	0	0	0	0.50	0.50	0	0	0	0
1.7 ACIN. FERT. WATER	0	0	0	0	0	6.00	12.00	10.00	0	0	0	0

SOURCE: NATIONAL RESOURCE ECONOMICS DIVISION, ERS, USDA, CORVALLIS, ORE 97331
 MACHINERY OPERATIONS BASED ON DATA DEVELOPED BY THE SOIL CONSERVATION SERVICE
 APPLICABLE TO LRS 06, 10, 23 AND 43

Table 22A

IRRIGATED FIELD CORN: PRODUCTION COSTS AND RETURNS
 LAND RESOURCE AREA 002 OREGON
 COORDINATED COMPREHENSIVE JOINT PLAN, PACIFIC NORTHWEST REGION

CATEGORY	UNITS	PRICE	QUANTITY	VALUE
PRODUCTION				
FIELD CORN	BU.	2.000	70.000	140.00
TOTAL RECEIPTS				140.00
OPERATING INPUTS				
NITROGEN	LBS.	.280	50.000	14.00
PHOSPHORUS	LBS.	.230	43.000	9.89
POTASSIUM	LBS.	.150	46.000	6.90
LIME	LBS.	.012	60.000	.72
ZINC	LBS.	.750	15.000	11.25
CUST. HERBICIDE	ACRE	2.200	1.000	2.20
LASO	LBS.	4.550	3.000	13.65
BALDEX	LBS.	3.300	1.500	4.95
CORN SEED	LBS.	.241	15.000	3.62
CUST. COMB. CORN	ACRE	35.000	1.000	35.00
CUSTOM HAULING	BU.	.100	70.000	7.00
TRACTOR FUEL COST	ACRE			3.27
TRACT REPAIR COST	ACRE			1.74
TRACTOR LUBE COST	ACRE			.49
EQUIP REPAIR COST	ACRE			2.31
IRRIG FUEL COST	ACRE			1.32
IRRIG REPAIR COST	ACRE			.22
TOTAL OPERATING COST				119.53
RETURNS TO LAND, LABOR, CAPITAL, MACHINERY, WATER, OVERHEAD, RISK, AND MANAGEMENT				21.47
CAPITAL COST				
ANNUAL OPERATING CAPITAL		.090	41.753	3.34
TRACTOR INVESTMENT		.080	26.754	2.14
EQUIPMENT INVESTMENT		.090	32.057	2.56
IRRIGATION SYSTEM INVESTMENT		.090	47.500	3.90
TOTAL INTEREST CHARGE				11.85
RETURNS TO LAND, LABOR, MACHINERY, WATER, OVERHEAD, RISK AND MANAGEMENT				9.62
OWNERSHIP COST (DEPRECIATION, TAXES, INSURANCE)				
TRACTOR	DOL.			3.32
EQUIPMENT	DOL.			5.07
IRRIGATION SYSTEM	DOL.			4.24
TOTAL OWNERSHIP COST				12.63
RETURNS TO LAND, LABOR, OVERHEAD, WATER, RISK AND MANAGEMENT				-3.01
LABOR COST				
MACHINERY LABOR	HR.	3.000	2.642	7.92
IRRIGATION LABOR	HR.	3.000	2.460	7.38
TOTAL LABOR COST				15.30
RETURNS TO LAND, OVERHEAD, WATER, RISK AND MANAGEMENT				-19.31

FLOOD IRRIGATED

BUDGET IDENTIFICATION NUMBER --- 83 210000 15196
 ANNUAL CAPITAL MONTH 10

Table 22B

IRRIGATED FIELD CORN: PRODUCTION COSTS AND RETURNS
 LAND RESOURCE AREA 002 OREGON
 COORDINATED COMPREHENSIVE JOINT PLAN, PACIFIC NORTHWEST REGION

CATEGORY	UNIT	QUANTITY	PRICE	VALUE
			DOLLARS	DOLLARS
PREHARVEST COSTS				
MACHINERY LABOR	HOUR	2,642	3.000	7,925
IRRIGATION LABOR	HOUR	2,460	3.000	7,380
NITROGEN	LBS.	50,000	.290	14,500
PHOSPHORUS	LBS.	47,000	.230	9,590
POTASSIUM	LBS.	46,000	.150	6,900
LIME	LBS.	60,000	.012	.720
ZINC	LBS.	15,000	.750	11,250
CUST. HERBICIDE	ACRE	1,000	2.200	2,200
LASO	LBS.	3,000	4.550	13,650
RALDEX	LBS.	1,500	3.300	4,950
CORN SEED	LBS.	15,000	.241	3,615
TRACTOR FUEL LUBE AND REPAIRS	ACRE	1,000	5.507	5,507
EQUIPMENT FUEL LUBE AND REPAIRS	ACRE	1,000	2.312	2,312
IRRIGATION FUEL LUBE AND REPAIRS	ACRE	1,000	1.540	1,540
INTEREST ON OPERATING CAPITAL		41,753	.080	3,340
TOTAL PREHARVEST COSTS	ACRE	---	---	95,179
HARVEST COSTS				
CUST. COMB. CORN	ACRE	1,000	35.000	35,000
CUSTOM HAULING	BU.	70,000	.100	7,000
TOTAL HARVEST COSTS				
PER HARVESTED ACRE (100)	ACRE	---	---	42,000
TOTAL HARVEST COSTS				
PER PLANTED ACRE	ACRE	---	---	42,000
TOTAL VARIABLE COST PER PLANTED ACRE	ACRE			137,179
YIELD PER HARVESTED ACRE 70,000 BU.				
YIELD PER PLANTED ACRE 70,000 BU.				
FLOOD IRRIGATED				

Table 22C

BUDGET IDENTIFICATION NUMBER 98 210000 15106										ANNUAL CAPITAL MONTH 10				BUDGET RECORD NUMBER 0				
IRRIGATED FIELD CORN: PRODUCTION COSTS AND RETURNS LAND RESOURCE AREA 002 OREGON COORDINATED COMPREHENSIVE JOINT PLAN, PACIFIC NORTHWEST REGION																		
LINE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	OEC	PRICE	WEIGHT	UNIT	ITEM	TYPE	CONT
PRODUCTION																		
1 FIELD CORN	0	0	0	0	0	0	0	0	3	70.00	0	0	2.000	0	2	88	2	0
OPERATING INPUTS																		
	RATE/UNIT																	
	PRICE																	
	NUMBER UNITS																	
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Table 23A

IRRIGATED FIELD CORN: PRODUCTION COSTS AND RETURNS
 LAND RESOURCE AREA 002 OREGON
 COORDINATED COMPREHENSIVE JOINT PLAN, PACIFIC NORTHWEST REGION

CATEGORY	UNITS	PRICE	QUANTITY	VALUE
PRODUCTION				
FIELD CORN	BU.	2.000	90.000	180.00
TOTAL RECEIPTS				180.00
OPERATING INPUTS				
NITROGEN	LBS.	.280	100.000	28.00
PHOSPHORUS	LBS.	.230	60.000	13.80
POTASSIUM	LBS.	.150	40.000	6.00
ZINC	LBS.	.750	15.000	11.25
CORN SEED	LBS.	.241	15.000	3.62
CUST. FEED. APP.	ACRE	2.600	1.000	2.60
CUST. HERBICIDE	ACRE	2.200	1.000	2.20
LASO	LBS.	4.550	3.000	13.65
PALDFX	LBS.	3.300	1.500	4.95
CUST. COMB. CORN	ACRE	35.000	1.000	35.00
CUSTOM HAULING	BU.	.100	90.000	9.00
TRACTOR FUEL COST	ACRE			3.07
TRACT REPAIR COST	ACRE			2.00
TRACTOR LUBE COST	ACRE			.46
EQUIP REPAIR COST	ACRE			2.25
IRRIG FUEL COST	ACRE			1.22
IRRIG REPAIR COST	ACRE			.21
TOTAL OPERATING COST				139.29
RETURNS TO LAND, LABOR, CAPITAL, MACHINERY, WATER, OVERHEAD, RISK, AND MANAGEMENT				40.72
CAPITAL COST				
ANNUAL OPERATING CAPITAL		.080	38.190	3.06
TRACTOR INVESTMENT		.080	26.541	2.12
EQUIPMENT INVESTMENT		.080	14.976	1.20
IRRIGATION SYSTEM INVESTMENT		.080	44.000	3.52
TOTAL INTEREST CHARGE				9.90
RETURNS TO LAND, LABOR, MACHINERY, WATER, OVERHEAD, RISK AND MANAGEMENT				30.92
OWNERSHIP COST (DEPRECIATION, TAXES, INSURANCE)				
TRACTOR	DDL.			3.11
EQUIPMENT	DDL.			2.51
IRRIGATION SYSTEM	DDL.			3.92
TOTAL OWNERSHIP COST				9.54
RETURNS TO LAND, LABOR, OVERHEAD, WATER, RISK AND MANAGEMENT				21.29
LABOR COST				
MACHINERY LABOR	HP.	3.000	1.351	4.05
IRRIGATION LABOR	HP.	3.000	3.375	10.13
TOTAL LABOR COST				14.21
RETURNS TO LAND, OVERHEAD, WATER, RISK AND MANAGEMENT				7.07

HAND-MOVE IRRIGATION SYSTEM

BUDGET IDENTIFICATION NUMBER --- 89 210000 11197
 ANNUAL CAPITAL MONTH 10

Table 23B

IRRIGATED FIELD CORN: PRODUCTION COSTS AND RETURNS
 LAND RESOURCE AREA 002 OREGON
 COORDINATED COMPREHENSIVE JOINT PLAN, PACIFIC NORTHWEST REGION

CATEGORY	UNIT	QUANTITY	PRICE	VALUE
			DOLLARS	DOLLARS
PREHARVEST COSTS				
MACHINERY LABOR	HOURL	1.361	3.000	4.083
IRRIGATION LABOR	HOURL	3.376	3.000	10.128
NITROGEN	LBS.	100.000	.290	29.000
PHOSPHORUS	LBS.	60.000	.230	13.800
POTASSIUM	LBS.	40.000	.150	6.000
ZINC	LBS.	15.000	.750	11.250
CORN SEED	LBS.	15.000	.241	3.615
CUST. FERT. APP.	ACRE	1.000	2.600	2.600
CUST. HERBICIDE	ACRE	1.000	2.200	2.200
LASO	LBS.	3.000	4.550	13.650
PAIDEX	LBS.	1.500	3.300	4.950
TRACTOR FUEL LUBE AND REPAIRS	ACRE	1.000	5.535	5.535
EQUIPMENT FUEL LUBE AND REPAIRS	ACRE	1.000	2.255	2.255
IRRIGATION FUEL LUBE AND REPAIRS	ACRE	1.000	1.424	1.424
INTEREST ON OPERATING CAPITAL		38.190	.080	3.055
TOTAL PREHARVEST COSTS	ACRE	---	---	112.545
HARVEST COSTS				
CUST. COMB. CORN	ACRE	1.000	35.000	35.000
CUSTOM HAULING	BU.	90.000	.100	9.000
TOTAL HARVEST COSTS				
PER HARVESTED ACRE (100)	ACRE	---	---	44.000
TOTAL HARVEST COSTS				
PER PLANTED ACRE	ACRE	---	---	44.000
TOTAL VARIABLE COST PER PLANTED ACRE	ACRE			156.545
YIELD PER HARVESTED ACRE		90.000 BU.		
YIELD PER PLANTED ACRE		90.000 BU.		
HAND-MOVE IRRIGATION SYSTEM				

Table 23C

BUDGET IDENTIFICATION NUMBER AB 210000 11197

ANNUAL CAPITAL MONTH 10

BUDGET 27 CORN NUMBER 0

IRRIGATED FIELD CORN PRODUCTION COSTS AND RETURNS
LAND RESOURCES AREA 002 OREGON
COORDINATED COMPREHENSIVE JOINT PLAN, PACIFIC NORTHWEST REGION

LINE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	PRICE	WEIGHT	UNIT	ITEM	TYPE	COAT
PRODUCTION																		
1 FIELD CORN	0	0	0	0	0	0	0	0	0	90.00	0	0	2.000	0	2	45	2	0
NUMBER OF UNITS																		
RATE/UNIT																		
OPERATING INPUTS																		
11 NITROGEN	0	0	0	0	0	0	0	0	0	0	0	0	.240	0	12	212	3	0
12 PHOSPHORUS	0	0	0	0	0	0	0	0	0	0	0	0	.230	0	12	213	3	0
13 POTASSIUM	0	0	0	0	0	0	0	0	0	0	0	0	.150	0	12	215	3	0
14 ZINC	0	0	0	0	0	0	0	0	0	0	0	0	.750	0	12	216	3	0
15 CORN SEED	0	0	0	0	0	0	0	0	0	0	0	0	.241	0	12	185	3	0
16 CUST. FERT. APP.	0	0	0	0	0	0	0	0	0	0	0	0	2.600	0	7	361	3	0
17 CUST. FERT. APP.	0	0	0	0	0	0	0	0	0	0	0	0	2.200	0	7	374	3	0
18 LASO	0	0	0	0	0	0	0	0	0	0	0	0	4.550	0	12	261	3	0
19 BALDEX	0	0	0	0	0	0	0	0	0	0	0	0	3.100	0	12	262	3	0
20 CUST. CORN	0	0	0	0	0	0	0	0	0	1.00	0	0	35.000	0	7	306	3	9
21 CUST. HAULING	0	0	0	0	0	0	0	0	0	90.00	0	0	.100	0	2	302	3	9
MACHINE REQUIREMENTS																		
38 M PLOW 6-16	0	0	0	0	0	0	0	0	0	1.00	0	0	0	0	4	33	4	0
39 TANDEM DISK	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	40	4	0
40 SPIKE HARROW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	46	4	0
41 SPIKE HARROW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	46	4	0
42 PLANTER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	80	4	0
49 AGRI IRRIG WATER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

HAND-MOVE IRRIGATION SYSTEM

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APPENDIX I

APPENDIX I

EQUATIONS FOR MACHINERY FIXED AND VARIABLE COSTS

The equations and data descriptions presented in the Appendix are taken from the User's Manual of the Crop and Livestock Budget Generator [7]. The equations are used in the budget generator program to compute fixed costs (depreciation, interest, insurance, and taxes) per hour; variable costs (repairs, fuel, and lubricants) per hour; and the performance rates (hours per acre) for the machines listed in the machinery requirements of the C tables. The equations are presented in this Appendix with a minimum of modification, for the convenience of the user of this report. Values of the variables used in the equations are furnished in table 1 and table 3 of this report.

Fixed Costs Per Hour

Fixed costs are those costs which do not vary with usage over a given time span. Fixed cost equations presented are depreciation, interest, insurance, and taxes.

Depreciation

There are several methods generally acceptable for computing depreciation. However, for planning purposes, depreciation should reflect the actual decline in value incurred by the operator. Bowers [2] uses a modified double declining balance method to represent this relation. The major modification is the addition of a factor which yields a very high first-year depreciation. Salvage value is obtained with the following equation:

$$(A-1) \quad \text{Salvage value} = \text{RFV1} \times \text{XLP} \times \text{RFV2}^{\text{YEARS}}.$$

XLP is the initial list price of the machine, and RFV1 and RFV2 are two variables which describe the declining balance depreciation equation for machines. RFV1 is the first year correction factor, and RFV2 is a component of the standard declining balance equation. Bowers [2] has estimated values for these two variables for selected categories of

machines. These values are found in columns 11 and 12 of table 1. The equation is also found in the Agricultural Engineers Yearbook [1]. The remaining variable, years owned, is the number of years the operator expects to own the machine.

Having calculated salvage value in equation (A-1) above, depreciation cost per hour may now be computed according to equation (A-2):

$$(A-2) \quad \text{Depreciation cost per hour} = \frac{(\text{purchase price} - \text{salvage value})}{(\text{hours used annually} \times \text{years owned})}.$$

Purchase price is the actual dollar amount paid for the machine, and hours used annually is the average number of hours the machine is used each year it is owned. The other variables have been explained previously.

Interest Cost Per Hour

The interest charge for machines used by the enterprise, based on the average amount of capital invested over the ownership period. Interest cost per hour is computed according to the following equation:

$$(A-3) \quad \text{Interest cost per hour} = \frac{(\text{purchase price} + \text{salvage value}) \times \text{interest rate}}{(2.0 \times \text{hours used annually})}.$$

The interest rate in the above equation is specified as default parameter number 6 in table 3. The term

$$\frac{(\text{purchase price} + \text{salvage value})}{(2.0 \times \text{hours used annually})}$$

is the average investment per hour used for the machine.

Insurance Cost Per Hour

The computed insurance cost per hour is also based on the average amount of capital invested. The formula for hourly insurance cost is:

$$(A-4) \quad \text{Insurance cost per hour} = \text{average investment per hour used} \times \text{insurance rate}.$$

The insurance rate in the above equation is specified as default parameter number 7 in table 3.

Tax Cost Per Hour

The cost of taxes per hour is based on the purchase price of the machine. Hourly tax costs are computed using the following equation:

$$(A-5) \quad \text{Tax cost per hour} = \frac{(\text{purchase price} \times \text{tax rate})}{(\text{hours used annually})} .$$

The tax rate is specified as default parameter number 8 in table 3.

Total Ownership Cost Per Hour

Total ownership cost per hour is the sum of depreciation cost per hour, insurance cost per hour, and tax cost per hour. Interest cost per hour is excluded, because the interest may represent an opportunity cost rather than a direct cost incurred by ownership.

Variable Costs

The variable costs associated with the operation of machinery are those costs which vary directly with usage. If a machine is not used, variable costs will not be incurred. Costs are computed for repairs, fuel, and lubricants.

Repair Cost

Repairs are usually the most variable component of machinery costs. Repair costs are influenced by a number of items, including (1) management; (2) maintenance level; (3) machine variability; (4) variability in local costs for parts and labor; and (5) the effects of climate and soils. However, in a study conducted by Bowers and Larsen, a set of equations was developed to estimate repairs. The equations relate repairs to the age of a machine and its initial list price. Equation (A-6) is the general equation used to estimate the total accumulated repairs for the number of years the machine is expected to be owned.

$$(A-6) \quad \text{Total accumulated repairs} = \text{initial list price} \\ \times RC1 \times RC2 \times (\text{percent life})^{RC3} .$$

$$(A-7) \quad \text{Percent life} = \frac{(\text{years owned} \times \text{hours used annually})}{(\text{hours of life})} .$$

$$(A-8) \quad \text{Repair cost per hour} = \frac{(\text{total accumulated repairs})}{(\text{hours used annually} \times \text{years owned})} .$$

RC1 is the ratio of total accumulated repairs to initial list price for the entire life of the machine. RC2 and RC3 are two repair cost constants that go together to determine the shape of the repair rate curve. Hours of life is the total number of hours during the machine's expected mechanical life.

Bowers and Larsen estimated values for the three variables - RC1, RC2, and RC3 - using regression analysis on Illinois machinery cost data. The American Society of Agricultural Engineers has adopted the above equation in their yearbook. Values of RC1, RC2, and RC3 are presented in table 1 of this report. An estimate of the total hours of life for each machine is also given.

Fuel Cost

The equation used to compute fuel cost per hour was developed at Oklahoma State University. The equation relates fuel consumption to the horsepower ratings of the tractors and self-propelled machines. The horsepower ratings are given in column 16 of table 1. The formula for computing fuel use is:

$$(A-9) \quad \text{Fuel consumption per hour} = \text{horsepower} \times \text{fuel} \\ \text{consumption multiplier} .$$

The formula for fuel cost per hour is:

$$(A-10) \quad \text{Fuel cost per hour} = \text{fuel consumption per hour} \\ \times \text{price per gallon of fuel} .$$

There are three fuel types (gasoline, LP gas, and diesel); consequently, there are three fuel multipliers for each implement that has a motor. The prices for the three fuel types are specified as default parameters 1, 2, and 3 in table 3. The fuel multipliers used in the budgets in this report are shown in table A-1. Fuel type is specified in column 14 of table 1.

Table A-1.--Fuel multipliers

Machine	Code	Gasoline	LP gas	Diesel
Wheel tractor.....	1	.0912	--	.0614
Wheel tractor.....	2	.0940	--	.0671
Wheel tractor.....	3	--	--	.0649
Wheel tractor.....	4	--	--	.0709
Crawler tractor.....	5	--	--	.0709
Crawler tractor.....	6	--	--	.0679
Crawler tractor.....	7	--	--	.0709
Wheel tractor.....	8	--	--	.0703
Wheel tractor.....	9	--	--	.0649
Self-propelled combine.....	13	.0975	--	.0697
Self-propelled combine.....	14	.0975	--	.0677
Self-propelled combine.....	15	.0975	--	.0677
Self-propelled swather.....	16	.0912	--	.0614
Self-propelled swather.....	17	.0940	--	.0671
Self-propelled combine.....	18	.1004	--	.0697

SOURCE: Natural Resource Economics Division, Economic Research Service, U.S. Department of Agriculture, Corvallis, Oregon.

Lubricant Cost

Lubricant cost is assumed to be 15 percent of the cost of fuel. Equation (A-11) is used to estimate the cost of lubricants:

$$(A-11) \quad \text{Lubricant cost per hour} = .15 \times \text{fuel cost per hour.}$$

The cost of fuel and lubricants is computed only for machines with motors. Lubricant costs for machines without motors are included in repair costs.

Capacities of Machines

Before hourly machinery costs can be allocated on a per-acre basis, one additional bit of information is needed for each implement. Required is the number of hours the machine must be operated to cover one acre (hours/times over). Equation (A-12) is used to compute this value for the pull-type implements (machine codes 29-100) and some engine-type machines (machine codes 12-29), table 1.

$$(A-12) \quad \text{Hours per acre} = \frac{(1.0)}{(\text{speed} \times \text{width} \times \text{EFF})/8.25}$$

where:

Speed = the speed the machine travels over the acre,
expressed in miles per hour;

Width = the number of feet covered by the implement;
and

EFF = the field efficiency of the machine.

Field efficiency is the ratio of the actual capacity of a machine to its theoretical capacity.

Machinery Hours Used

The number of hours each machine is used on an acre is computed by multiplying the hours-per-acre coefficient computed in equation (A-12) by the times over per acre for each machine specified in the machinery requirements section of the C tables. Hours for a particular power unit are computed by multiplying the number of hours the implements (machine codes 30-100) are used, by a default factor of 1.1 to reflect turning time and traveling to and from the field. Total tractor hours for an enterprise are computed by summing the number of hours machines 1 through 9 are used.

Variable Machine Costs Per Acre

After computing the number of hours that each machine is used, the cost of fuel, lubricant, and repair cost per acre for self-propelled (machine codes 1-29) and the cost of lubricants and repairs per acre for machinery (machine codes 30-100) are computed. This is accomplished by

multiplying the variable costs per hour for each machine by the number of hours each machine is used.

Fixed Costs Per Acre

The fixed costs per acre for tractors (machine codes 1-9) and machinery (machine codes 10-100) are categorized into ownership cost (depreciation, insurance, and taxes) and capital cost (interest cost). The amount of capital per hour for each machine is computed by dividing the interest cost per hour by the interest rate. To place these items (ownership cost and capital cost) on a per-acre basis, ownership and capital costs per hour are multiplied by the number of hours that each machine is used on an acre.

Hours of Machinery Labor

The hours of labor required to operate the machinery are computed by multiplying total tractor hours by a default factor of 1.1. This factor is used to reflect time required for adjusting equipment, lubrication, maintenance, etc.

For all self-powered implements, total labor is computed by multiplying total time by the default factor 1.2. This factor reflects time required for adjusting equipment, lubrication, maintenance, etc.

